## Linda B. Smith

Department of Psychological and Brain Sciences & The Program in Cognitive Science Indiana University Bloomington, Indiana 47405 Distinguished Professor (2007), Chancellor's Professor (1997), Professor (1985), Associate Professor (1981), Assistant Professor (1977)

## **Education:**

University of Wisconsin - Madison B.S. 1973 University of Pennsylvania Ph.D. 1977

## **Selected Honors:**

Phi Beta Kappa

University Fellow - University of Pennsylvania 1976

Dissertation Year Fellow - University of Pennsylvania, 1977

Summer Faculty Fellowship - Indiana University, 1978

Lilly Fellow – (Indiana University) 1982

James McKeen Cattell Sabbatical Award, 1984 (declined)

Research Career Development Award - NICHD, 1984-1989

Early Career Contribution, American Psychological Association, 1985

Honors Faculty Fellow, Indiana University, 1990, 1991, 1992

Lilly Fellow - (UCSD) 1993-94

Tracy M. Sonneborn Award (Indiana University) 1997)

Society of Experimental Psychologists, 2005

Fellow, American Psychological Society, 2006

Fellow, American Academy of Arts and Sciences, 2007

Fellow, Cognitive Science Society, 2008

Distinguished Cognitive Scientist Award, UC-Merced, 2009

Distinguished Scholar Award, Office of Women's Affairs, Indiana University, 2009

David E. Rumelhart Prize in Cognitive Science, 2013

Distinguished Scientific Career Contribution, APA, 2013

Henry Besch Promotion of Excellence Award, Indiana University, September 2014

American Psychological Association, William James Fellow Award, May 2018

Society of Experimental Psychologists, Norman Anderson Lifetime Achievement Award, March 2019

Elected National Academy of Sciences, April 2019

## Selected Appointments:

National Science Foundation, Memory & Cognitive Processes Panel, 1983-86

National Science Foundation, Advisory Committee for the Directorate for Biological,

Behavioral and Social Sciences, 1989-1991

National Institute of Mental Health, Cognition, Emotion and Personality Panel, 1989-93 Honors Faculty, Indiana University, 1990-1993

Forum for Federal Research Management, 1992 - 1994

National Institutes of Health, Scientific Review Advisory Committee, 1997

Society for Research In Child Development, Ethics Committee, 1997-1999

National Institutes of Health, Study Section (LCOM), 2002-2006

Associate Dean (Undergraduate Education), College of Arts and Sciences, Indiana University, 2000-2003

President, Phi Beta Kappa, Indiana Chapter – 2003-2004

Governing Board, Cognitive Science Society, 2003 – 2009

Rumelhart Prize Committee, 2004 – 2009 (Chair 2008 -2009)

Chair, Department of Psychological and Brain Sciences, Indiana University-Bloomington, 2005 – 2012

Governing Board, International Conference on Development and Learning (ICDL), 2006 – 2009

Joint (IEEE) Committee, merger ICDL-EpiRob, 2009-2012

Governing Board, Chairs of Graduate Programs in Psychology (COGDOP), 2010-2011 NIH Directors Fund (Second Round)- Pioneer Grants -2010, Early Investigator Awards 2012, 2014

Advisory Board, Delta Center, 2012 – 2015

Advisory Board, Databrary Project, 2012 – 2016

Chair, Glushko Dissertation Prize Committee, 2014-2016

National Institute of Child Health and Human Development, Study Section (T32), 2014-2016

National Science Foundation, Advisory Committee for the Directorate for Social,

Behavioral and Economic Sciences, 2015 - 2019

Kinsey Institute, Board of Trustees, 2015-2016

APA Distinguished Scientific Award Committee, 2015-2018

National Institute Child Heal and Human Development, permanent study section member, Biobehavioral IRG, 2016-2018

James S McDonnell Foundation - Science Advisory Board, 2017 -

#### **Editorial Boards:**

Journal of Experimental Psychology: Learning. Memory and Cognition, 1981-84 Child Development. 1984-1995, 1997-2000 Contemporary Psychology. 1988-1990 Cognitive Science, 1996-2001 Journal of Memory and Language, 1996 - 1999 Associate Editor, Psychological Review, 1994 - 1997

# Memberships:

Cognitive Science, Society for Research in Child Development, The Psychonomic Society, American Psychological Society, International Conference in Development and Learning

Research Support (active)

# Sensorimotor Dynamics of Early Parent-Child Interactions Build Word Learning

07/01/13 - 05/31/18 NIH/NICHD \$1,618,500 Role: Co-Investigator.

# **Training Program in Integrative Developmental Process**

07/1995- 04/2020 NIH/NICHD \$2,439,161

Role: PI

# Collaborative Research: Place Value as a System of Mapping

09/01/2016- 08/31/2020 NSF DRL \$713,619

Role: PI

Learning: Machines, Brains and Children

05/01/2017 to 04/30/2021 Indiana University \$2,500,000 Role: Lead of 8 member team)

What you see is what you learn: Visual attention in statistical word learning.

11/01/2017 – 10/31/2022 NIH/NICHD 1,700,000 Role: Co-investigator

# Visual category learning by toddlers provides new principles for teaching rapid generalization

9/1/2019-8/31/2022 NSF-SBE \$564,232

Role: PI

Publications: (from most recent)

#### 2019

Yuan, L., Prather, R. W., Mix, K. S., & Smith, L. B. (In press) Number representations drive number-line estimates. **Child Development** 

McQuillan, M.E., Smith, L.B., Yu, C., & Bates, J.E. (2019) Parents influence the visual learning environment through children's manual actions. **Child Development**. doi: 10.1111/cdev.13274

Slone, L. K., Smith, L. B. & Yu, C. (2019) Self-generated variability in object images predicts vocabulary growth. **Developmental Science.** 

Yuan, L., Prather, R. W., Mix, K. S. & Smith, L. B. (2019) Preschoolers and multi-digit numbers: A path to mathematics through the symbols themselves **Cognition**, 189, 89-104.

Yuan, L., Xu, T. L., Yu, C. & Smith, L. B. (2019) Sustained Visual Attention is More Than Seeing. **Journal of Experimental Child Psychology**, 179, 324-336. PMID: 30579246

Suarez-Rivera, C., Smith, L. B. & Yu, C. (2019) Multimodal parent behaviors within joint attention support sustained attention in infants. **Developmental Psychology**, 55(1), 96-109. PMID: 30489136 PMCID: PMC6296904

- Suanda, S. H., Barnhart, M., Smith, L. B. & Yu, C. (2018) The Signal in the Noise: The Visual Ecology of Parents' Object Naming. **Infancy**, 1-22.
- Borjon, J. I., Abney, D. H., Smith, L. B. & Yu, C. (2018) Developmentally Changing Attractor Dynamics of Manual Actions with Objects in Late Infancy. **Complexity**, 2018.
- Bambach, S., Crandall, D. J., Smith, L. B. & Yu, C. (2018) Toddler-inspired visual object learning. **Advances in Neural Information Processing Systems** 31.
- Kucker, S., Samuelson, L. K., Perry, L. K., Yoshida, H., Colunga, E., Lorenz, M. G. & Smith, L. B. (in press) Reproducibility and a unifying explanation: lessons from the shape bias. **Infant Behavior and Development**. PMID: 30343894
- Sheya, A. & Smith, L. B. (2018) Development weaves brains, bodies and environments into cognition. **Language, Cognition and Neuroscience**, DOI: 10.1080/23273798.2018.1489065
- Suarez-Rivera, C., Smith, L. B. & Yu, C. (in press) Multimodal parent behaviors within joint attention support sustained attention in infants. **Developmental Psychology**.
- Jayaraman, S. & Smith, L. B. (in press) Faces in early visual environments are persistent not just frequent. **Vision Research**. PMID: 29852210
- Vales, C. & Smith, L. B. (2018) When a word is worth more than a picture: Words lower the threshold for object identification in 3-year-old children. **Journal of Experimental Child Psychology**, 175, 37-47. PMID: 29986170
- Yu, C., Suanda, S. H. & Smith, L. B. (2018) Infant sustained attention but not joint attention to objects at 9 months predicts vocabulary at 12 and 15 months. **Developmental Science**. PMID: 30255968
- Smith, L. B., Jayaraman, S., Clerkin, E. & Yu, C. (2018) The Developing Infant Creates a Curriculum for Statistical Learning. **Trends in Cognitive Sciences**, 4, 325-336. PMID: 29519675
- Carvalho, P. F., Vales, C., Fausey, C. M., & Smith, L. B. (2018) Novel names extend for how long preschool children sample visual information. **Journal of Experimental Child Psychology**, 168, 1-18. PMCID: PMC5805614
- Montag, J. L., Jones, M. N., & Smith, L. B. (2018) Quantity and diversity: Simulating early word learning environments. **Cognitive Science**, 42 (Suppl. 2), 375-412. PMCID: PMC5980672

- Smith, L. B. & Slone, L. K. (2017) A Developmental Approach to Machine Learning?. *Frontiers in Psychology*, 8:2124. PMCID: PMC5723343
- Suanda, S. H., Smith, L. B., & Yu, C. (2017). The Multisensory Nature of Verbal Discourse in Parent–Toddler Interactions. *Developmental Neuropsychology*, 1-18.

Clerkin, E. M., Hart, E., Rehg, J. M., Yu, C., & Smith, L. B. (2017). Real-world visual statistics and infants' first-learned object names. *Phil. Trans. R. Soc. B*, 372(1711), 20160055.

Jayaraman S., Fausey C. & Smith LB (2017) Why are faces denser in the visual experiences of younger than older infants?. *Developmental Psychology*, 53(1), 38-49.

Benitez, V. L.\*, Vales, C.\*, Hanania, R. & Smith LB (2017) Sustained selective attention predicts flexible switching in preschoolers. *Journal of Experimental Child Psychology*, 156, 29-42. \*Equal authorship contribution.

Yu, C. & Smith, L.B. (2017) Eye-hand coordination predicts joint attention. *Child Development*, *88*, 2060-2078.

Yu, C., & Smith, L. B. (2017). Multiple Sensory-Motor Pathways Lead to Coordinated Visual Attention. *Cognitive science*, *41*(S1), 5-31.

# 2016

Oudeyer, P. Y. & Smith, L. B. (2016) How evolution may work through curiosity-driven developmental Process. *Topics in Cognitive Science*, *8*, 492-502.

Fausey, C.M., Jayaraman, S., & Smith, L.B. (2016) From faces to hands: Changing visual input in the first two years. *Cognition*, 152, 101-107.

Yu, C. & Smith, L.B. (2016) The social origins of sustained attention in one-year-old infants. *Current Biology*, 26, 1-6.

Kuwabara, M. & Smith, L.B. (2016) Cultural differences in visual object recognition in 3-year-old children. *Journal of Experimental Child Psychology*, 147, 22-38.

# 2015

Jayaraman S., Fausey C. & Smith LB (2015) The Faces in Infant-Perspective Scenes Change over the First Year of Life. *PLoS ONE*, 10(5):e0123780

Morse AF, Benitez VL, Belpaeme T, Cangelosi A, Smith LB (2015) Posture affects how robots and infants map words to objects. *PLoS ONE*, 10(3). PMCID:PMC4364718

Augustine, E., Jones, S. & Smith, L. B. (2015) Relations among early object recognition skills: Objects and letters. *Journal of Cognition and Development*, 16, 221-235. PMCID:PMC4426263. (Best paper award for 2015).

Montag J., Jones M. & Smith LB (2015) the words children hear: picture books and the statistics for language learning. *Psychological Science*, 26, 1489-1496.

Cantrell, L., Boyer, T., Cordes, S. & Smith, L. B. (2015) Signal clarity: an account of the variability in infant quantity discrimination tasks. *Developmental Science*, 18(6): 877-893.

Vales, C., & Smith, L. B. (2015) Words, shape, visual search and visual working memory in 3-year-old children. *Developmental Science*, 18, 65-79.

Cantrell, L., Kuwabara, M., & Smith, L. B. (2015). Set size and culture influence children's attention to number. *Journal of Experimental Child Psychology*, *131*, 19-37

Smith, LB., Yu, C., Yoshida, H., & Fausey, C. (2015) Contributions of head-mounted cameras to studying the visual environments of infants and young children. *Journal of Cognition and Development*, 16, 417-419.

## 2014

Yurovsky, D., Fricker, D., Yu, C. & Smith, L. B. (2014) The role of partial knowledge in statistical word learning. *Psychonomic Bulletin & Review*, 21, 1 -22.

Pereira, A., Smith, L. B. & Yu, C. (2014) a bottom-up view of toddler word learning. **Psychonomic Bulletin & Review**, 21, 178-185.

James, K.H., Swain, S., Smith, L.B. & Jones, S.S. (2014) Young children's self-generated object views and object recognition. *Cognition and Development*, 15, 393-401.

James, K., Jones, S., Swain, S., Pereira, A., & Smith, L. B. (2014) Some views are better than others: Evidence for a visual bias in object views self-generated by toddlers. *Developmental Science*, 17, 338-351.

Mix, K., Prather, R., Smith, L. B. & Stockton, J. (2014) Young children's interpretation of multi-digit number names: from emerging competence to mastery. *Child Development*, 85, 1306-1319.

Byrge, L., Smith, L. B. & Mix, K. (2014) Beginnings of place value: how preschoolers write three-digit numbers. *Child Development*, 85, 437-443.

Smith, LB., Street, S., Jones, S.S., & James, K.H. (2014) Using the axis of elongation to align shapes: Developmental changes between 18 and 24 months. *Journal of Experimental Child Psychology*, 123, 15-35.

Arias-Trejo, N., Cantrell, L., Smith, L. B., & Alva Canto, E. A. (2014) Early comprehension of the Spanish plural. *Journal of Child Language*, 41, 1356-1372.

Smith, L.B., Suanda, S.H., & Yu, C. (2014). The unrealized promise of infant statistical word-referent learning. *Trends in Cognitive Science*, 18, 251-258.

Byrge, L., Sporns, O. & Smith, L. B. (2014) Developmental process emerges from extended brain-body-behavior networks. *Trends in Cognitive Sciences*, 18, 395-403.

Cantrell, L. & Smith, L.B. (2013) Set size, individuation, and attention to shape, *Cognition*, 126, 258-267.

Smith, L.B. & Yu, C. (2013) Visual attention is not enough: Individual differences in statistical word-referent learning in infants. *Language, learning and development*, 9, 25-49.

Yurovsky, D., Smith, L. B. & Yu, C. (2013) Statistical Word Learning at Scale: The Baby's View is Better *Developmental Science*, 16, 959-966.

Yurovsky, D., Yu, C. & Smith, L. B. (2013) Competitive processes in cross-situational word learning. *Cognitive Science*, 37, 891-921.

Yurovsky, D., Boyer, T., Smith, L. B., & Yu, C. (2013) Probabilistic Cue Combination: Less is More. *Developmental Science*, 16, 149-158.

Yu, C. & Smith, L. B. (2013) Joint Attention without Gaze Following: Human Infants and Their Parents Coordinate Visual Attention to Objects through Eye-Hand Coordination. *PLoS One*, 8(11):e79659. doi:10.1371/journal.pone.0079659.

Cantrell, L. & Smith, L. B. (2013) Open questions and a proposal: A critical review of the evidence on infant numerical abilities. **Cognition**, 128, 331-352.

Grzyb, B., Smith, L. B. & del Pobil, A. (2013) Reaching for the unreachable: reorganization of reaching with walking. *In IEEE Transactions on Autonomous Mental Development*, 5, 162-172.

Smith, L. B. (2013) It's all connected: Pathways in visual object recognition and early noun learning. *American Psychologist*, 68, 618-629.

## 2012

Smith, L. B., & Colunga, E. (2012). Developing categories and concepts. In Spivey, M., Joanisse, M. & McRae, K. (Eds.) *The Cambridge Handbook of Psycholinguistics*. Cambridge University Press.

Yu, C. & Smith, L. B. (2012) Modeling cross-situational word-referent learning: Prior questions. *Psychological Review*, 119, 21-39.

Sethuraman, N. & Smith, L. B. (2012) Verbs and attention to relational roles in English and Tamil. *Journal of Child Language*, 40, 358 – 390.

Kuwabara, M. & Smith, L.B. (2012) Cross-cultural differences in cognitive development: Attention to relations and objects. *Journal of Experimental Child Psychology*, 113, 20-35.

Yurovsky, D., Yu, C., Smith, L. B., & Yurovsky, D. (2012) Statistical speech segmentation and word learning in parallel: Scaffolding from child-directed speech. *Frontiers in Psychology*, *3*, 374.

Benitez, V.L. & Smith, L.B. (2012) Predictable locations aid early object name learning. *Cognition*, 125, 339-352.

Yu, C. & Smith, L.B. (2012) Embodied attention and word learning in toddlers. *Cognition*, 125, 244-262.

Yee, M., Jones, S. & Smith, L. B. (2012) Changes in visual object recognition precede the shape bias in early noun learning. *Frontiers in Psychology*, Vol.3, doi: 10.3389/fpsyg.2012.00533.

## 2011

Smith, L.B., Yu, C., & Pereira, A. F. (2011). Not your mother's view: The dynamics of toddler visual experience, *Developmental Science*, 14(1), 9-17.

Yu, C. & Smith, L.B. (2011) What you learn is what you see: Using eye movements to study infant cross-situational word learning. *Developmental Science*, 14, 153-180.

Maouene, J., Laakso, A. & Smith, L. B. (2011) Object associations of early-learned light and heavy English verbs. *First Language*, *31*, *109-132*.

Sethuraman, N., Laasko, A., & Smith, L.B. (2011) Verbs and syntactic frames in children's elicited actions: A comparison of Tamil- and English-speaking children. *Journal of Psycholinguistic Research*, 40, 241-252.

Son, J., Smith, L. B. & Goldstone, R. (2011) Connecting instances to promote children's relational reasoning. *Journal of Experimental Child Psychology*, 108, 260-277.

Street, S., James, K., Jones, S. & Smith, L.B. (2011) Vision for action in toddlers: The posting task, *Child Development*, 82, 2083 – 2094.

Kuwabara, M., Son, J. & Smith, L. B. (2011). Attention to context: US and Japanese children's emotion judgments *Journal of Cognition and Development*, 12, 502-517.

Augustine, E., Jones, S. & Smith, L. B. (2011) Parts and relations in young children's shape-based object recognition. *Journal of Cognition and Development*, 12, 556-572.

Beckage, N., Smith, L. B. & Hills, T. (2011) Small worlds and semantic network growth in typical and late talkers. *PLoS One*, 6, (e19348).

Samuelson, L., Smith, L. B., Perry, L. & Spencer, J. (2011) Grounding Word Learning in Space. *PLoS One* 6(12): e28095. doi:10.1371/journal.pone.0028095

Spencer, J. P., Perrone, S., Smith, L. B. & Samuelson, L. K. (2011) Learning words in space and time: Probing the mechanism behind the 'suspicious coincidence'. *Psychological Science*, 22, 1049-1057.

Smith, L. B. & Jones, S. (2011) Symbolic play connects to language through visual object recognition. *Developmental Science*, 14, 1142-1149.

Sheya, A. & Smith, L.B. (2010) Changing priority maps in 12- to 18-month-olds: An emerging role for object properties. *Psychological Bulletin and Review*. 17, 22-28.

Hanania, R. & Smith, L.B. (2010) Selective attention and attention switching. *Developmental Science*, 622-635.

Hidaka, S. & Smith, L. (2010) A single word in a population of words. *Language Learning and Development*, 6, 206-222.

Smith, L.B. & Sheya, A. (2010) Is cognition enough to explain cognitive development? *Topics in cognitive science, 2, 725-735.* 

Sethuraman, N. & Smith, L.B. (2010) Cross-linguistic differences in talking about scenes, *Journal of Pragmatics*, 42, 2978-299

McClelland, J. L., Botvinick, M. M., Noelle, D. C., Plaut, D. C., Rogers, T. T., Seidenberg, M. S. & Smith, L. B. (2010) Letting structure emerge: Connectionist and dynamical systems approaches to cognition. *Trends in Cognitive Science*, 14, 348-356.

Smith, L.B. (2010) Action as developmental process (commentary). *Journal of Child Language*.37, 263-267.

Hills, T. T., Maouene, J., Riordan, B. & Smith, L. B. (2010) The associative structure of language: contextual diversity in early word learning, Journal of Memory and Language, 63, 259-273

Hidaka, S. & Smith, L. B. (2010) Packing: A geometric analysis of feature selection and category formation. *Cognitive Systems Research*, 12, 1-18.

Smith, L. B., Colunga, E. & Yoshida, H. (2010) Knowledge as process: Contextually-cued attention and early word learning. *Cognitive Science*, 34, 1287-1314.

Pereira, A., James, K., Jones, S. & Smith, L. B. (2010) Early biases and developmental changes in self-generated object views. *Journal of Vision*, 10 (11):22, 1-13.

# 2009

Smith, L.B. (2009) Dynamic executives. (commentary) *Developmental Science*, 12, 22-23.

Clearfield, M. Dineva, E., Smith, L.B., Diedrich, F., & Thelen, E. (2009), Cue salience and infant perseverative reaching: Tests of the Dynamical Field Theory. *Developmental Science*. 12, 26-40.

Pereira, A. & Smith, L.B. (2009) Developmental changes in visual object recognition between 18 and 24 months of age. *Developmental Science*. 12, 57-80.

- Hockema, S. & Smith, L.B. (2009) Learning language, outside-in and in-side out. *Linguistics*, *47*, 453-479.
- Hills, T., Maouene, M., Maouene, J., Sheya, A. & Smith, L.B. (2009) Longitudinal analysis of early semantic networks: Preferential attachment or preferential acquisition? *Psychological Science*, 20, 729-739.
- Smith, L.B. (2009) Dynamic systems, sensori-motor processes, and the origins of stability and flexibility. In J. Spencer, M. Thomas, and J. McClelland (eds). *Toward a unified theory of development: Connectionism and dynamic systems theories reconsidered*. Oxford University Press.
- Smith, L. B. (2009). From fragments to geometric shape: Changes in visual object recognition between 18 and 24 months. *Current Directions in Psychological Science*, 18(5), 290-294.
- Hills, T. T., Maouene, M., Maouene, J., Sheya, A., & Smith, L. (2009). Categorical structure among shared features in networks of early-learned nouns. *Cognition*, *112*(3), 381-396.
- Colunga, E., Smith, L. B. & Gasser, M. (2009) Correlation versus prediction in children's word learning: Cross-linguisic evidence and simulations. *Language and Cognition*, *1* (2), 197-217.
- Spencer, J.P., Dineva, E. & Smith, L.B. (2009). Comment on "Infants' Perseverative Search Errors Are Induced by Pragmatic Misinterpretation". **Science**, 325, 1624-a.
- Sheya, A. & Smith, L.B. (2011) Development through sensory motor coordinations. In J.R. Stewart, O. Gapenne, and E. Di Paolo (Eds.) *Enaction: Toward a new paradigm for cognitive science*. MIT Press.
- Smith, L.B. & Pereira, A. (2009) Shape, action, symbolic play, and words:Overlapping loops of cause and consequence in developmental process. In S. Johnson (ed), *Neoconstructivism: The new science of cognitive development*. Oxford University Press.
- Yu, C. Smith, L.B., Shen, H. Pereira, A. & Smith, T (2009) Active Information selection. Attention through the hands. *IEEE Transactions on autonomous mental development*, 1, 141-151.

- Son, J. Y., Smith, L. B., & Goldstone, R. L. (2008). Simplicity and generalization: Short-cutting abstraction in children's object categorizations. *Cognition*, *108*(3), 626-638.
- Zapf, J. A., & Smith, L. B. (2008). Meaning matters in children's plural productions. *Cognition*, 108(2), 466-466.
- Colunga, E., & Smith, L. B. (2008). Flexibility and variability: Essential to human cognition and the study of human cognition. *New Ideas in Psychology*, *26*(2), 174-174.
- Pereira, A. F., Smith, L. B., & Yu, C. (2008). Social coordination in toddler's word

learning: Interacting systems of perception and action. *Connection Science*, 20(2-3), 73-73.

Yoshida, H., & Smith, L. B. (2008). What's in view for toddlers? Using a head camera to study visual experience. *Infancy*, 13(3), 229-229.

Perry, L. K., Smith, L. B., & Hockema, S. A. (2008). Representational momentum and children's sensori-motor representations of objects. *Developmental Science*, *11*(3), F17-F17.

Smith, L., & Yu, C. (2008). Infants rapidly learn word-referent mappings via cross-situational statistics. *Cognition*, *106*(3), 1558-1558.

Colunga, E., & Smith, L. B. (2008). Knowledge embedded in process: The self-organization of skilled noun learning. *Developmental Science*, *11*(2), 195-195.

Maouene, J., Hidaki, S., & Smith, L.B. (2008) Body-parts and early learned verbs. *Cognitive Science*, *7*, 1200-1216

## 2007

Smith, L.B. & Breazeal, C. (2007) The dynamic lift of developmental process. *Developmental Science*, 10, 61-68.

Smith, L. B., Maouene, J., Hidaka, S. (2007) The body and children's word learning. In J. Plummert & J. Spencer (eds.) *The emerging spatial mind.* New York: Oxford University Press, 168-192.

Yu, C., & Smith, L. B. (2007). Rapid word learning under uncertainty via cross-situational statistics. *Psychological Science*, *18*(5), 414-420.

Zapf, J. A., & Smith, L. B. (2007). When do children generalize the plural to novel nouns? *First Language*, 27(1), 53-73

Sandhofer, C., & Smith, L. B. (2007). Learning adjectives in the real world: How learning nouns impedes learning adjectives. *Language Learning and Development*, *3*(3), 233-267.

Laakso, A., & Smith, L. B. (2007). Pronouns and verbs in adult speech to children: A corpus analysis *Journal of Child Language*, *34*, 725 – 763.

Barsalou, L. Breazeal, C. & Smith, L.B. (2007). Cognition as coordinated noncognition. *Cognitive Processing*, 8, 79-91.

Clearfield, M. W., Diedrich, F. J., Smith, L. B., & Thelen, E. (2006). Young infants reach correctly in A-not-B tasks: On the development of stability and perseveration. *Infant Behavior & Development*, 29(3), 435-444.

Kersten, A. W., Smith, L. B., & Yoshida, H. (2006). Influences of object knowledge on the acquisition of verbs in english and japanese. In K. Hirsh-Pasek, & R. M. Golinkoff (Eds.), *Action meets word: How children learn verbs*. (pp. 499-524). New York, NY, US: Oxford University Press.

Sheya, A., & Smith, L. B. (2006). Perceptual features and the development of conceptual knowledge. *Journal of Cognition and Development*, *7*(4), 455-476.

Gershkoff-Stowe, L., Connell, B., & Smith, L. (2006). Priming overgeneralizations in two-and four-year-old children. *Journal of Child Language*, 33(3), 461-486.

Smith, L. B., & Samuelson, L. (2006). An attentional learning account of the shape bias. *Developmental Psychology*, *42*(6), 1339-1343.

Thelen, E. & Smith, L. B. (2006). *Dynamic systems theories*. *Handbook of Child Psychology*, Hoboken, NJ, US: John Wiley & Sons Inc.

#### 2005

Smith, L.B. & Gasser, M. (2005) The development of embodied cognition: Six lessons from babies. *Artificial Life*, 11, 13-30.

Smith, Linda B. (2005) Action alters perceived shape. *Cognitive Science*, 29, 665-679.

Colunga, E., & Smith, L. B. (2005). From the lexicon to expectations about kinds: A role for associative learning. *Psychological Review*, *112*(2), 347-382.

Jones, S. S., & Smith, L. B. (2005). Object name learning and object perception: A deficit in late talkers. *Journal of Child Language*, *32*(1), 223-240.

Samuelson, L. K., & Smith, L. B. (2005). They call it like they see it: Spontaneous naming and attention to shape. *Developmental Science*, 8(2), 182-198.

Smith, L. B. (2005). Emerging ideas about categories. In L. (. Gershkoff-Stowe, & D. H. (Rakison (Eds.), Building object categories in developmental time.; building object categories in developmental time. *Carnegie Melon Symposia on Cognition*; (pp. 159-173).

Yoshida, H., & Smith, L. B. (2005). Linguistic cues enhance the learning of perceptual cues. *Psychological Science*, *16*(2), 90-95.

Smith, L. B. (2005). Cognition as a dynamic system: Principles from embodiment. *Developmental Review*, *25*(3-4), 278-298.

Sandhofer, C. & Smith, L.B. (2004) Perceptual complexity and form class cues in novel word extension tasks: how 4 year old children interpret novel adjectives and count nouns. *Developmental Science*, 7, 378-388.

Gershkoff-Stowe, L., & Smith, L. B. (2004). Shape and the first hundred nouns. *Child development*, 75(4), 1098-1114.

Smith, L.B. (2004) Shape: A developmental product. In L. Carlson & E. van der Zee, *Functional features in language and space*. Oxford University Press, 235-256.

## 2003

Yoshida, H. & Smith, L.B. (2003) Known and novel noun extensions: Attention at two levels of abstraction. *Child Development*, 74 (2), 565-577.

Yoshida, H. & Smith, L.B. (2003) Shifting ontological boundaries: How Japanese- and English-speaking children generalize names for animals and artifacts. Target article in *Developmental Science*, 6, 1-17.

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Emile van der Zee (eds.) *The Interface Between Cognition and Language*. Oxford University Press.

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## 1985

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Smith, L. B. (1981). The importance of the overall similarity of objects for adults' and children's classifications. *Journal of Experimental Psychology: Human perception and Performance*. 2, 811-824.

Johnson, H., & Smith, L. B. (1981). Children's inferential abilities in the context of reading to understand. *Child Development*. 52. 1216-1223.

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Jusczyk, P. W., Smith, L. B., & Murphy, C. (1981). Perceptual classification of speech. *Perception and Psychophysics*, 30. 10-23.

#### 1980

Smith, L. B. (1980). Development and the continuum of separability. *Perception and Psychophysics*. 28, 164-172.

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Kemler, G. D., & Smith, L. B. (1979). Accessing similarity and dimensional relations: The effects of integrality and separability on the discovery of relational concepts. *Journal of Experimental Psychology: General*, 108, 133-150.

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## 1978

Kemler, D. G., & Smith, L. B. (1978). Is there a developmental trend from integrality to separability in perception? *Journal of Experimental Child Psychology*. 26. 498-507.

Smith, L. B., & Kemler, D. G. (1978). Levels of experienced dimensionality in children and adults. *Cognitive Psychology*., 502-532.

## 1977

Jusczyk, P., Rosner, B., Cutting, J., Foard, C., & Smith, L. (1977). Categorical perception of nonspeech sounds by two-month-old infants. *Perception and Psychophysics*. 21. 50-54.

Smith, L. B., & Kemler, D. G. (1977). Developmental trends in free classification: Evidence for a new conceptualization of perceptual development. *Journal of Experimental Child Psychology*. 24, 279-298.

#### 1975

Smith, L. B., Kemler, D. G. & Aronfreed, J. (1975). Developmental trends in voluntary selective attention: Differential effects of source distinctness. **Journal of Experimental Child Psychology**. 20, 352-362.

# Invited Talks and Colloquia:

Department of Psychology, Dalhousie University, Halifax, Nova Scotia, March, 1980.

Sixth Annual Interdisciplinary Conference, Park City, Utah, January, 1981.

Department of Psychology, Princeton University, November, 1983.

Department of Psychology, Yale University, November, 1983.

Department of Psychology, Purdue University, January, 1985.

Conference on similarity and analogy, University of Illinois, May, 1986.

Symposium on perception and cognition, Cornell University, August, 1986

Symposium on Object Perception: Structure and Process, U.N.E.D., Madrid, Spain, May, 1987.

Developmental Area, Department of Psychology, University of Illinois, Champaign, March. 1988.

Department of Speech and Hearing Sciences Colloquium Series, Indiana University, Bloomington, April, 1988.

Institute for Child Development, University of Minnesota, Minneapolis, October, 1988.

Department of Psychology, University of Pennsylvania, January, 1989.

Department of Psychology, Duke University, February, 1989.

Department of Psychology, University of Iowa, March, 1989.

Department of Psychology, Indiana University, March, 1989.

Dynamics System Conference, Kansas City, April, 1989.

Symposium on The Perception of Structure, Yale University, May, 1989.

Dynamic Systems Tutorial, NIH, Washington, D. C., June, 1989.

Symposium on Neural Darwinism, Eleventh International Joint Conference on Artificial Intelligence, Detroit, August, 1989.

Department Of Psychology, Princeton University, December, 1989.

Department Of Psychology, Michigan State University, January, 1990.

Department Of Psychology, University of Virginia, February, 1990.

Department of Psychology, University of Pittsburgh, March, 1990.

Cognitive Sciences, University of Illinois, May, 1990.

Department of Psychology, Wayne State University, March 1991

Department of Psychology, Arizona State University, March 1991

Keynote address, Fourth Artificial Intelligence Symposium, New Brunswick, Canada, September 1991

Department of Psychology, Northwestern University, October 1991

Department of Psychology, University of Michigan, March 1992

Department of Psychology, University of California-San Diego, April 1992

Symposium on Chaos, American Psychological Association, Washington, D.C., August 1992.

Department of Psychology, University of Chicago, January 1993.

Symposium on Auditory Prothesis, Providence, RL, July 1993.

Minnesota Symposium on Child Development, University of Minnesota, October 1993.

Cognitive Science, University of California - Irvine, November 1993.

Cognitive Science, UCLA, March 1994 Psychology, UC-Berkeley, March 1994

Plenary speaker, Jean Piaget Society, June 1994

Cognitive Science, State University of New York -Buffalo, December 1994.

Cognitive Science, University of Western Ontario, March 1995

Workshop on Object Retrieval, Neurosciences Institute, 1995

Society for Philosophy and Psychology, July 1995.

Max Planck Institute, Niimegen, Netherlands, November 1995

Psychology, University of California-San Diego, December 1995

Invited Address, Midwestern Psychological Association, May 1996

Ontario Institute for the Study of Education, Univ. of Toronto, June 1996

Neurosciences Institute, November 1996

Psychology, Virginia Technological University, February 1997

Carnegie-Mellon Symposium on Cognition, June 1997

Cognitive Science, New Bulgarian University, July 1997

William Brown Memorial Lecture, University of Nebraska (Omaha), September 1997

Invited Address, International Conference on Infant Studies, April 1998

Complexity Symposium, University of California – Irvine, January 1999

Conference on Embodied Cognition, Tsukuba University, Japan, February 1999

The Counterpoints Symposium, SRCD, April 1999

Speech and Hearing Sciences, Indiana University, Bloomington, December 1999

University of Chicago, October 2000

University of Pennsylvania, Cognitive Science, February 2001

University of Notre Dame, Workshop on Spatial Concepts, June 2001

Conference on Developmental and Embodied Cognition, Edinburgh, Scotland, August 2001

CNRS Interdisciplinary Conference on Abstraction, Gif, France, September 2001 Invited Symposium on Dynamic Systems, Psychonomic Society, Orlando, November 2001

Cognitive Science, Ohio State University, February 2002

Cognitive Science, Franklin & Marshall College, March 2002

Tamigawa University, Japan, August 2002

Symposium of Brain and Development, Tateshima Japan, August 2002

Cognitive Science Laboratory, Kyoto University, Japan, August 2002

Cognitive Science, Johns Hopkins University, November 2002

Symposium on Embodied Cognition, Lisbon Portugal, November 2002

Emory University, February 2003

Purdue University, February 2003

Charles Spiker Memorial Lecture, University of Iowa, February 2003

Keynote Speaker, Canadian Language and Literacy Network, June 2003

Workshop on Concepts and Learning, Lund, Sweden, June 2003

European Conference on Developmental Psychology, Milan, August 2003.

Babes-Bolyai University, Cluj-Napoca, Romania, September, 2003

Conference on Space and Language, Johns Hopkins University, September, 2003

University of California-San Diego (Cognitive Science, November 2003)

University of Connecticut, (psychology), December 2003

Cognitive Science Society, Nationwide Virtual Colloquium over the Internet, February 2004

Dynamics and Development Workshop, History and Philosophy of Science, University of Minnesota, April 2004

Cognitive Science, UCSD, October 2004

Theology and Science Lectures, Gregorian Pontifical University, Rome, November 2004

Masters Seminar Series, University of Arizona, November 2004

Cognitive Science, University of Arizona, November 2004

Psychology, Harvard University, December 2004

Cognitive and Brain Sciences, MIT, December 2004

Cognitive Science, Ohio State University, March 2005

University of Chicago, Psychology, April 2005

James J. Gibson Lecture, Cornell University, May 2005

Dynamics and Connectionism Series, University of Iowa, June 2005

Invited DARPA meeting on Biologically inspired cognitive architectures, October, 2005

Society of Experimental Psychologists, San Diego, February 2006

Debate with Jesse Prinz, Psychology-Philosophy Great Ideas Series, University of British Columbia, March 2006

Psychology, University of British Columbia, March 2006

Invited Address, APA, New Orleans, August 2006

Psychology, University of Toronto, September 2006

NYU, Workshop on Grounding, October 2006

Invited Symposium, Computational Cognitive Neuroscience, November 2006

Cognitive Science, University of Toronto, March 2007

Cognitive Science Summer School, New Bulgarian University, July 2007

Dynamic Systems Workshop, Portugal, September 2007

Invited Talk, Cognitive Systems, EU sponsored workshop, Paris, September 2007

Plenary Talk, Cognitive Development Society, Sante Fe, October 2007

Psychology Department Stanford University, December 2007

Institute of Child Development, University of Minnesota, February 2008

Cognitive Science, University of Minnesota, February 2008

Plenary Address, Cognitive Science, Washington DC, July 2008

Plenary Address, Simulated Adaptive Behavior, Osaka, July 2008

Master Lecture, American Psychological Society, August 2008

Bayesian Learning Workshop, Berkeley, August 2008

Invited Address, International Conference on Spatial Cognition, Freiberg, September 2008

Psychology, Northumbria University, New Castle, UK, September 2008

Invited Address, Language Learning and Development, Boston, October 2008

Colloquium, Physics Department (Physics Education), University of Maryland, November, 2008.

Colloquium, Cognitive Science, University of Rochester, February 2009

Presidential Dream Course Lecture, Oklahoma University, March 2009

Colloquium, Archives de Piaget, Geneva, March 2009

Workshop on complexity, Princeton University, March 2009

Distinguished Lecturer – Cognitive Science, UC-Merced, April 2009

Plenary Address, Society for Philosophy and Psychology, Bloomington, IN, July 2009

Colloquium, Birkbeck College, University of London, October 2010

Plenary Address, European Union Cognition, Zurich, January 2010

Workshop on Sound Symbolism, Emory University, March 2010

Nordforsk Workshop on Spatial Cognition, Stikelstadt Norway, April 2010

Colloquium, Babes Boyes University, Cluj Napoca, Romania, May 2010

Elizabeth Bates Memorial Lecture, Keynote Society for Research on Child Language Disorders, Madison, WI, June 2010.

Keynote, AMLAP, York England, September 2010.

Distinguished Speaker Series, Michigan State University, October 2010

Keynote speaker, European Cognitive Science Society, May 2011.

Paris Symposium on Shape in Biology, July 2011.

Plenary, Education Leadership Conference, APA, September 2011

Invited speaker, NSF Workshop on Data Archiving and Data Mining September 2011

Colloquium, University of Wisconsin – Madison, March 2012

Colloquium, USC, March 2012

Invited Talk, University of Bologna, April 2012

Invited Talk, CUNY Grad Center, May 2012

Keynote, Jean Piaget Society, Toronto, May 2012

Invited Talk, Max Planck Institute for Psycholinguistics, Nijmegen, June 2012

Invited Talk, Konrad Lorenz Institute, Vienna, July 2012

Keynote, European Society for Philosophy & Psychology, London, August 2012 Invited Talk, NIH SfN workshop on Dynamical Neuroscience, New Orleans, October 11, 2012

Colloquium, Department of Psychology, Princeton University, Princeton NJ, November 5, 2012

Workshop on Development, Montreal, May 2013

Meeting of the Delta Center, May 2013, Iowa City

Rumelhart Prize Lecture, Cognitive Science Society, August 2013

Yeshiva University-Princeton University, Workshop, on "Bridging the gap between coordination and conversation," Yeshiva University, October 2013

NIH Pre SfN Workshop on Attention, San Diego, November 2013

Colloquium, Department of Psychology, University of Pennsylvania, September 8, 2014

All Campus Address, Salem State College, November 13, 2014

Colloquium, Cognitive Science, University of California - San Diego, December 7, 2014

Colloquium, Psychology, University of Louisville, March 2, 2015

Keynote Vision Workshop, CVPR, Boston, June 11, 2015

Keynote, Statistical Learning Workshop, San Sebastian Spain, June 26, 2015

SILC Symposium, Space and Mathematics, Chicago, November 2015

Keynote, Eyewear: Egocentric Vision, Dagstuhl Germany, January 24-28, 2016

Keynote, Toronto Intersdisciplinary Symposium on the Mind, February 6-7, 2016

Colloquium, Psychology, University of Tennessee, February 23, 2016

Colloquium, Psychology, University of Connecticut, April 6, 2016

Colloquium, Cognitive Science, Northwestern University, May 3, 2016

Presidential Address, Midwestern Psychological Society, May 5, 2016

Keynote, International Congress of Infant Studies, New Orleans, May 27, 2016

Keynote, Statistical Learning Conference, Lancaster, UK, June 23, 2016

Keynote, Artificial Life Conference, Cancun Mexico, July 5, 2016

Keynote, Brain to Brain Coupling, Etorre Majorama Institute, Erice, Italy, September 7, 2016

Keynote, Neural Computation and Psychology Workshop, Philadelphia, August 2017

Colloquium, Psychology, Princeton University, October 14, 2016

Colloquium, Psychology, Syracuse University, October 21, 2016

Colloquium, Psychology, University of Chicago, November 14, 2016

Colloquium, Complex Systems, Florida Atlantic University, February 2017

Keynote, Development and Learning Workshop, Montevideo, Uruguay, March 2017

Keynote, International Conference Psychological Science, Vienna, March 24, 2017

Colloquium, Rutgers University - Newark, April 21, 2017

Workshop, Epigenetic Robotics, Lorentz Center, Leiden Netherlands, May 16, 2017

Statistical Learning Conference, Bilbao, Spain, June 28, 2017

Colloquium, University of Miami, February 2018

APS, William James Award Talk, May 2018

Keynote, Developmental Conference, University East Anglia, June 2018

Keynote, ESLP, Lancaster UK, August 2018

Colloquium, University College Dublin, Ireland, November 2018

Colloquium, University of Texas-Dallas, February 2019

Colloquium, University of Maryland, Cognitive Science, February 2019

Keynote, Cognition in Time, Lund, Sweden, April 2019

Talk, Google Deepmind, London, UK, May 2019

Keynote, Aygmenting Deep Learning with Affective Processes and Prediction, Gothenberg Sweden, May 2019

Johns S. McDonnell Foundation, Sedona Arizona, June 2019

Keynote, Gordon Research Conference, Bates College, Maine, June 2019