

Hyowon Gweon

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EMPLOYMENT

2014. 7 – present Stanford University, Department of Psychology
Assistant Professor
2012. 9 – 2014. 6 MIT, Brain and Cognitive Sciences
Post-doctoral Associate
Social Cognitive Neuroscience Lab (PI: Rebecca Saxe)

EDUCATION

2007. 9 – 2012. 9 MIT, Brain and Cognitive Sciences
Ph.D. in Brain and Cognitive Sciences
Early Childhood Cognition Lab (PI: Laura Schulz)
Social Cognitive Neuroscience Lab (PI: Rebecca Saxe)
2001. 3 – 2005. 6 Ewha Womans University, Seoul, Korea
B.A. in Psychology, August 2005 (*summa cum laude*)

RESEARCH INTERESTS

I am broadly interested in how learning occurs in social contexts. My research brings together developmental, computational, neural, and clinical methods, aiming to provide a unified description of the cognitive and neural mechanisms that underlie the representations and inferential processes that allow us to learn about the world, and to communicate what we know.

HONORS AND AWARDS

- Kavli Frontiers of Science Fellow (2014)
APA Dissertation Award, Division 7: Developmental Psychology (2014)
MIT Brain and Cognitive Sciences Dissertation Award (June 2013)
Marr Prize (best paper first-authored by a student), Cognitive Science Society (2010)
Travel Grant - Cognitive Science Society (2009, 2010)
Travel Award, Society for Research in Child Development (2009, 2011)
Singleton Fellowship for Graduate Studies, MIT (2007, 2011)
21st Century Fellowship, Ewha Womans University, South Korea (2001 – 2011)
- Full support for tuition and boarding for undergraduate studies at Ewha and graduate study abroad (Total amount over \$ 250,000)

Publications (*:papers first-authored by students).

PAPERS IN PRESS / UNDER REVIEW

Shneidman, L., Gweon, H., Schulz, L. E., & Woodward, A. (in press). Learning from others and spontaneous exploration: A cross-cultural investigation. *Child Development*.

Gershman, S. & Gweon, H. (under review). Learning the structure of social influence.

Gweon, H., Shafto, P. & Schulz, L.E. (under review). Too much information? Prior knowledge and the cost of information in learning and teaching.

PEER-REVIEWED JOURNALS

Jara-Ettinger, J., **Gweon, H.**, Tenenbaum, J. B., & Schulz, L. E. (2015). Children's understanding of the costs and rewards underlying rational action. *Cognition*, 140, 14-23.

Gweon, H., Pelton, H., Konopka, J.A., & Schulz, L.E. (2014). Sins of omission: Children selectively explore when teachers are under-informative. *Cognition*, 132, 335-341.

Koldewyn, K., Yendiki, A., Weigelt, S., **Gweon, H.**, Julian, J., Richardson, H., Malloy, C., Saxe, R., Fischl, B., & Kanwisher, N. (2014). Differences in the right inferior longitudinal fasciculus but no general disruption of white matter tracts in children with autism spectrum disorder. *Proceedings of the National Academy of Sciences*, 111(5), 1981-1986.

Gweon, H., Dodell-Feder, D., Bedny, M., & Saxe, R. (2012). Theory of Mind performance in children correlates with functional specialization of a brain region for thinking about thoughts. *Child Development*, 83(6), 1853-1868.

Gweon, H. & Schulz, L.E. (2011). 16-month-olds rationally infer causes of failed actions. *Science*, 332(6037), 1524.

Bonawitz, E., Shafto, P., **Gweon, H.**, Goodman, N. D., Spelke, E., & Schulz, L. (2011). The double-edged sword of pedagogy: Instruction limits spontaneous exploration and discovery. *Cognition*, 120, 322-330.

Gweon, H., Tenenbaum, J.B., & Schulz, L.E. (2010). Infants consider both the sample and the sampling process in inductive generalization. *Proceedings of the National Academy of Sciences*, 107(20), 9066-9071.

Gweon, H., Kim, S.L., & Lee, H.-W. (2006) The Relationship between Word Frequency and Semantic Priming Effects in Hangul Word Recognition. *Korean Journal of Psychology: Experimental*, 18, 203-220.

PEER-REVIEWED CONFERENCE PROCEEDINGS

*Bass, I., Hawthorne, D., Goodman, N. D., & **Gweon, H.** (2015). Not by number alone: The effect of teacher's knowledge and its value in evaluating "sins of omission". *Proceedings of the 37th Annual Conference of the Cognitive Science Society*.

Gweon, H. & Asaba, M. (2015). Knowing what he could have shown: The role of alternatives in children's evaluation of under-informative teachers. *Proceedings of the 37th Annual Conference of the Cognitive Science Society*.

Gweon, H., Chu, V., & Schulz, L. E. (2014). To give a fish or to teach how to fish? Children weigh costs and benefits in considering what information to transmit. *Proceedings of the 36th Annual Conference of the Cognitive Science Society*.

Gweon, H., Shafto, P., & Schulz, L.E (2014). Children consider prior knowledge and cost of information in learning from others and teaching others. *Proceedings of the 36th Annual Conference of the Cognitive Science Society*.

Jara-Ettinger, J., **Gweon, H.**, Tenenbaum, J.B., Schulz, L.E. (2014). I'd do anything for a cookie (but I won't do that): Children's understanding of the costs and rewards underlying rational action. *Proceedings of the 36th Annual Conference of the Cognitive Science Society*.

Shafto, P., **Gweon, H.**, Fargen, C., & Schulz, L. (2012). Enough is enough: Inductive sufficiency guides learners' ratings of informant helpfulness. *Proceedings of the 34th Annual Conference of the Cognitive Science Society*, 977-982.

Gweon, H., Young, L., & Saxe, R. (2011). Theory of Mind for you, and for me: behavioral and neural similarities and differences in thinking about beliefs of the self and other. *Proceedings of the 33rd Annual conference of the Cognitive Science Society*, 2492-2497.

Gweon, H., Pelton, H., & Schulz, L.E. (2011). Adults and school-aged children accurately evaluate sins of omission in pedagogical contexts. *Proceedings of the 33rd Annual conference of the Cognitive Science Society*, 1242-1247.

Gweon, H. & Schulz, L. E. (2010). Is it me or the world? 16-month-olds distinguish competing hypotheses about the cause of failed interventions. *Proceedings of the 32nd Annual Conference of the Cognitive Science Society*, 2846-2851. * **Recipient of Marr Prize 2010 (best student paper).**

Gweon, H., Tenenbaum, J.B., & Schulz, L. E. (2009). What are you trying to tell me? A Bayesian model of how toddlers can simultaneously infer property extension and sampling processes. *Proceedings of the 31st Annual Conference of the Cognitive Science Society*, 1282-1287.

Bonawitz, E.B., Shafto, P., **Gweon, H.,** Chang, I., Katz, S., & Schulz, L. (2009) The Double-Edged Sword of Pedagogy: Modeling the Effect of Pedagogical Contexts on Preschoolers' Exploratory Play. *Proceedings of the 31st Annual Conference of the Cognitive Science Society*, 1575-1580.

Gweon, H., & Schulz, L. E. (2008). Stretching to learn: Ambiguous evidence and variability in preschoolers' exploratory play. In B. C. Love, K. McRae, & V. M. Sloutsky (Eds.), *Proceedings of the 30th Annual Conference of the Cognitive Science Society*, 570-574.

BOOK CHAPTERS

Gweon, H. & Saxe, R. (2013). Developmental cognitive neuroscience of Theory of Mind: When everything we thought we knew is wrong. In P. Rakic and J. Rubenstein (Eds.), *Developmental neuroscience: Basic and clinical mechanisms*. Elsevier.

FUNDING

John Templeton Foundation and Fordham University, Varieties of Understanding Project: PI (sub-award). \$167,555 (2014. 7 – 2016. 6)

Stanford Cognitive Neuroscience Institute Seed Grant. \$6300 (2015.4 – 2015.9)

TALKS

INVITED TALKS

“To give a fish, or teach how to fish? Cost-and-benefit analysis in learning from others and teaching others” (September 2015), UC Berkeley, Department of Psychology.

“Learning from others and teaching others: Children’s inferences and evaluations in social contexts” (April 2015). Symbolic Systems Forum, Stanford University.

“Roots of Learning: Inferences and Evaluations in the Social Context” (November 2014), UC Santa Cruz, Department of Psychology.

“Roots of Learning: Inferences and Evaluations in the Social Context” (November 2014), University of Chicago, Department of Psychology.

“Learning in the Social Context: Inference, Exploration, and Evaluation in Early Childhood” (August 2014), APA Convention, Washington DC

“Bridging Levels of Analysis: Learning in the Social Context” (June 2014), NeuroCog 2014, Coffs Harbour, Australia

“Learning in the Social Context: Inferences and Evaluations in the Social Context” (May 2014), Korea University

“Neuroplasticity and Development” (April 2014), 2014 German-American Kavli Frontiers of Science Symposium, UC Irvine

“Learning from Others about Others” (October 2013), CDS Pre-conference on Computational Models of Cognitive Development, Memphis, TN

“Roots of Learning: Inferences and Evaluations in the Social Context” (September 2013), New England Biosciences Society, Harvard Medical School

“Teaching Limits What Can Be Learned (but that’s not the whole story)” (May 2013), Center for Academic Studies, Israel

“Roots of Learning: Inferences and Evaluations in the Social Context” (February 2013), Yale University

“Roots of Learning: Inferences and Evaluations in the Social Context” (February 2013), Stanford University, Psychology departmental Colloquium

“Cognitive Developmental Neuroscience: What Can Neuroimaging Tell Us about How Children Learn?” (Feb 2013), Stanford University, Psychology Dept. Developmental Brown Bag

“Roots of Learning: Inferences and Evaluations in the Social Context” (January 2013), UC Berkeley, Psychology Departmental Colloquium

“Roots of Learning: Inferences and Evaluations in the Social Context” (January 2013), UC San Diego, Psychology Departmental Colloquium

“Roots of Learning: Inferences and Evaluations in the Social Context” (Dec 2012), Boston College

“Roots of Learning: Inferences and Evaluations in the Social Context” (Dec 2012), Columbia University

“Roots of Learning: Inferences and Evaluations in the Social Context” (Nov 2012), Duke University

“Social Learning as Rational Inference” (Feb 2012), Stanford University, Language and Cognition Lab

“What, When, and How of Learning from Others” (Oct 2011). Harvard University, Laboratory for Developmental Studies Seminar

CONFERENCE PRESENTATIONS

2015

Shneidman, L., Gweon, H., Schulz, L.E., & Woodward, A. (March 2015). Learning from instruction and exploration: A cross-cultural perspective. Biennial Meeting of the Society for Research in Child Development, Philadelphia, PA.

2014

Gweon, H., Chu, V., & Schulz, L.E. (July 2014). To give a fish, or to teach to fish? Children weigh costs and benefits to decide what information to transmit. 35th Annual Conference of the Cognitive Science Society, Quebec City, Canada).

Gweon, H., Shafto, P., & Schulz, L.E. (July 2014). What Do They Know, and What Does It Take Them to Know? Prior Knowledge and the Cost of Information in Teaching and Learning from Others. 35th Annual Conference of the Cognitive Science Society, Quebec City, Canada.

Gweon, H., Richardson, H., Dufour, N. & Saxe, R. (July 2014). Development of ToM regions: Typical and Atypical Development. MISTI Mini-Symposium on Social Cognitive Neuroscience. Berlin, Germany

Gweon, H., Chu, V., & Schulz, L.E. (June 2014). To give a fish, or to teach to fish? Children weigh costs and benefits to decide what and how much information to transmit. Society for Philosophy and Psychology, Vancouver, Canada.

2012

Gweon, H., Shafto, P., Schul, L.E. (August 2012). Too Much Information: Prior knowledge, common ground, and children's evaluation of instruction. Poster presented at the 34th Annual Conference of the Cognitive Science Society, Sapporo, Japan.

Gweon, H., & Schulz, L.E. (June 2012) Is it Me or the world? 16-month-olds use statistics to infer the cause of failed interventions (Symposium title: Learning in a world of uncertainty). Oral presentation at International Society for Infant Studies conference, Minneapolis, MN.

2011

Gweon, H. (Oct 2011). Inductive Inference, Social Evaluation, and Learning. (Symposium title: Communicative inference and trade-offs of learning from others). Oral presentation at Child Development Society, Philadelphia, PA.

Gweon, H., Young, L., & Saxe, R. (July 2011). Theory of Mind for you, and for me: behavioral and neural similarities and differences in thinking about beliefs of the self and other. Oral presentation at the 33rd Annual Conference of the Cognitive Science Society, Boston, MA.

Gweon, H., Pelton, H., & Schulz, L.E. (July 2011). Adults and school-aged children accurately evaluate sins of omission in pedagogical contexts. Poster presented at the 33rd Annual Conference of the Cognitive Science Society, Boston, MA.

Gweon, H., Pelton, H., & Schulz, L.E. (April 2011). Who's Helpful: Children are sensitive to sins of omission in pedagogical contexts. (Symposium title: Social influences on learning in infancy and early childhood). Oral presentation at the Society for Research in Child Development, Montreal, QC, Canada.

Gweon, H., & Schulz, L.E. (April 2011). 16-month-olds use statistics to infer the cause of failed interventions. (Symposium title: Cornerstones of causal reasoning). Oral presentation at the Society for Research in Child Development, Montreal, QC, Canada.

2010

Gweon, H., & Schulz, L.E. (August 2010). Is it me or the world? 16-month-olds distinguish competing hypotheses about the cause of failed interventions. Oral presentation at the 32nd Annual Conference of the Cognitive Science Society, Portland, Oregon.

Gweon, H., Tenenbaum, J.B., Schulz, L.E. (June 2010). Is it me or the world? 16-month-olds distinguish competing hypotheses about the cause of failed interventions. Poster presented at the Rovereto Workshop for Cognition & Evolution, Rovereto, Italy.

2009

Gweon, H., Dodell-Feder, D., Bedny, M., Saxe, R. (October 2009). Developmental change in the neural mechanisms of Theory of Mind. Poster presented at the Society for Neuroscience, Chicago, IL.

Gweon, H., Tenenbaum, J.B., Schulz, L.E. (July 2009). What are you trying to tell me? A Bayesian model of how toddlers can simultaneously infer property extension and sampling processes. Oral presentation at the 31st Annual Conference of the Cognitive Science Society, Amsterdam, The Netherlands.

Gweon, H. & Schulz, L.E. (April 2009). Infants' Sensitivity to Sampling as a Rational Constraint on Inductive Inferences. Co-organizer & presenter for student symposium (Title: Preschoolers' exploration of ambiguous evidence) at the Society for Research in Child Development, Denver, CO.

Schulz, L.E. & Gweon, H. (April 2009). Checks and balances in inductive inference: How children know what they should (and should not) infer from sparse data. (Symposium title: What Are You Trying to Tell

Me? Sensitivity to Sampling as a Constraint on Inductive Inference in Infancy and Early Childhood). Oral presentation at the biennial meeting of the Society for Research in Child Development, Denver, CO.

2008

True or False: The rTPJ responds to task-relevant beliefs. Poster presented at the Annual Meeting of the Social & Affective Neuroscience Society (June 6 - 8, Boston, MA).

Stretching to learn: Ambiguous evidence and variability in preschoolers' exploratory play. Poster presented at the 30th Annual Conference of the Cognitive Science Society (July 23 - 26, Washington D.C.)
2010

TEACHING EXPERIENCE

Stanford

PSYCH187: Research design, implementation, and communication in cognitive development.

PSYCH178: New methods for answering old questions: Linking social cognition and social cognitive neuroscience.

PSYCH 278: Social cognitive development: New methods for answering old questions.

PSYCH 175: Early learning and social cognition

MIT

2010 Fall 9.85 Infant & Childhood Cognition, MIT. TA (Instructor: Dr. Laura Schulz)

2009 Spring 9.00 Introduction to Psychology, MIT. TA & Section Instructor (Instructor: Dr. John Gabrieli)

2009 Spring MIT Graduate Student Teaching Certificate Program

STUDENTS ADVISED

Graduate Students

Natalia Velez (NSF Fellowship), Stanford (September 2014 – present)

Sophie Bridgers (NSF Fellowship), Stanford (September 2014 – present)

PhD Committee

Natalie Colich, Stanford

Taylor Holubar, Stanford

Alexandra Horowitz, Stanford (May 2015)

Undergraduate Students

Grace Bennett Pierre (Wellesley): CSLI Summer Internship Program

Emily Tang (Stanford): Spring 2015 – present.

Andrew C. McCabe (Stanford): Spring 2015 – Summer 2015.

Alyssa Lombardo (Stanford): Winter 2015 – present.

Chelsea Pan (Stanford): Winter 2015 – present.

Ronald Anderson (Stanford): Winter 2015 – present.

Ilona Bass (Oberlin University, OH): Summer 2013 – 2014.6. Undergraduate Honors Thesis

Veronica Chu (MIT): Summer 2013 – 2014.6

Alexandra Kaye (Wellesley): IAP 2014 – 2014.6

Shivani Kaushal (MIT): Fall 2013 – 2014.6

Meiji Yue (MIT): Summer 2013 – 2014.1

Leah Lassard (University of San Diego, CA): Summer 2013

Carmyn Polk (Wellesley): Spring 2012 - present

Nathaniel Kim (MIT): IAP 2012 – present

Julia Ellermeier (MIT): Summer 2012 - present

Luke Chellis (MIT): Fall 2011 – Spring 2012

Jaclyn Konopka (MIT): Spring 2011 – Fall 2011

