

Shari Liu

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EMPLOYMENT **NIH F32 (NRSA) Postdoctoral Fellow, MIT (10/2020-)**
Postdoctoral Associate, MIT (07/2020-09/2020)
Advisor: Rebecca Saxe

EDUCATION **Ph.D. and M.A., Harvard University (2014-2020)**
Thesis: Nature and origins of intuitive psychology in human infants
Advisor: Elizabeth Spelke

B.A., Dartmouth College (2010-2014)
Psychology and Education, *summa cum laude*
Advisors: Carolyn Parkinson, Thalia Wheatley

Publications * = undergraduate or post-baccalaureate advisee

JOURNAL ARTICLES **Liu, S.**, Brooks, N. B. & Spelke, E. S. (2019). Origins of the concepts cause, cost, and goal in prereaching infants. *Proceedings of the National Academy of Sciences*, 116(36), 17747-17752. doi:[10.1073/pnas.1904410116](https://doi.org/10.1073/pnas.1904410116)

Liu, S., *Gonzalez, G., & Warneken, F. (2018). Worth the wait: Children trade off delay and reward in self- and other-benefiting decisions. *Developmental Science*, e12702. doi:[10.1111/desc.12702](https://doi.org/10.1111/desc.12702)

Liu, S., Ullman, T. D., Tenenbaum, J. B., & Spelke, E. S. (2017). Ten-month-old infants infer the value of goals from the costs of actions. *Science*, 358(6366), 1038-1041. doi:[10.1126/science.aag2132](https://doi.org/10.1126/science.aag2132)

Liu, S., & Spelke, E. S. (2017). Six-month-old infants expect agents to minimize the cost of their actions. *Cognition*, 160, 35-42. doi:[10.1016/j.cognition.2016.12.007](https://doi.org/10.1016/j.cognition.2016.12.007)

Parkinson, C., **Liu, S.**, & Wheatley, T. (2014). A common cortical metric for spatial, temporal, and social distance. *The Journal of Neuroscience*, 34(5), 1979-1987. doi:[10.1523/jneurosci.2159-13.2014](https://doi.org/10.1523/jneurosci.2159-13.2014)

REFEREED CONFERENCE PROCEEDINGS Gjata, N. N.*, Ullman, T. D., Spelke, E. S., & **Liu, S.** (2020). Look before you leap: Quantitative tradeoffs between peril and reward in action understanding. *Proceedings of the 42nd Annual Meeting of the Cognitive Science Society*.

Liu, S., Cushman, F. A., Gershman, S. J., Kool, W., & Spelke, E. S. (2019). Hard choices: Children's understanding of the cost of action selection. *Proceedings of the 41st Annual Meeting of the Cognitive Science Society*.

Liu, S., McCoy, J. P., & Ullman, T. D. (2019). People's perceptions of others' risk preferences. *Proceedings of the 41st Annual Meeting of the Cognitive Science Society*.

Liu, S., Ullman, T. D., Tenenbaum, J. B., & Spelke, E. S. (2017). What's worth the effort: Ten-month-old infants infer the value of goals from the costs of actions. *Proceedings of the 39th Annual Meeting of the Cognitive Science Society*.

UNDER REVIEW &
IN PREPARATION

Liu, S., Pepe, W. *, Ullman, T. D., Tenenbaum, J. B., & Spelke, E. S. (Under revision). Dangerous ground: Thirteen-month-old infants are sensitive to peril in other people's actions. Preprint: <https://psyarxiv.com/rvydk>

Liu, S., & Warneken, F. (In prep). Rational optimism in children's social reasoning.

Funding

NIH F32 National Research Service Award F32HD103363 (2020-2023)

Proposal: *Neural foundations of learning, reasoning, and surprise in human infants*

Role: Principal investigator

Total Amount: \$194,790

Knox Fund Large Grant (x2), Harvard University (2019, 2020)

Funds for conference attendance

Total Amount: \$7000

NSF Graduate Research Fellowship (2016-2019)

Proposal: *Leveraging a theory of rational action for understanding and planning behavior*

Total Amount: \$138,000

Restricted Funds Small Grant (x5), Harvard University (2016-2020)

Funds for conference attendance

Total Amount: \$2500

Stimson Research Grant, Harvard University, (2010)

First year graduate student grant

Total Amount: \$1000

Conference Presentations

CHAired
SYMPOSIA

Liu, S., Ullman, T. D., Tenenbaum, J. B., & Spelke, E. S. (July 2020). Dangerous ground: Thirteen-month-old infants are sensitive to peril in other people's actions. In "Better safe than sorry: Infants' use of social information to reason and learn about threat". Symposium to be conducted at the biennial meeting of the *International Congress on Infant Studies (ICIS)*, held virtually due to COVID-19.

Liu, S., Brooks, N. B., & Spelke, E. S. (January 2020). Prereaching infants' understanding of others as causal agents. In "Making things happen: How infants and children understand agents' interventions on the physical world". Symposium conducted at the 10th annual *CEU Conference on Cognitive Development (BCCCD20)*, Budapest, Hungary.

TALKS

Liu, S. (July 2020). Origins of social intelligence in human infants. In "The origins of common sense in humans and machines". Workshop to be conducted at the 42nd Annual Meeting of the *Cognitive Science Society (CogSci)*, held virtually due to COVID-19. <https://ocs2020.github.io/>

Liu, S., Cushman, F., Gershman, S., Kool, W., & Spelke, E. S. (July 2019). Hard

choices: Children's understanding of the cost of action selection. Slide session conducted at the 41st annual meeting of the *Cognitive Science Society*, Montreal, Canada.

Liu, S., McCoy, J., & Ullman, T. (July 2019). People's perceptions of others' risk preferences. Slide session conducted at the 41st annual meeting of the *Cognitive Science Society*, Montreal, Canada.

Liu, S., Ullman, T. D., Tenenbaum, J. B., & Spelke, E. S. (July 2018). Infants use risk and effort to infer what agents value. In "Effort and Persistence Across Early Development". Symposium conducted at the biennial meeting of the *International Congress on Infant Studies (ICIS)*, Philadelphia, PA, USA.

Liu, S., Ullman, T. D., Tenenbaum, J. B., & Spelke, E. S. (July 2017). What's worth the effort: Ten-month-old infants infer the value of goals from the costs of actions. Slide session conducted at the 39th annual meeting of the *Cognitive Science Society*, London, UK.

Liu, S., *Gonzalez, G., & Warneken, F. (April 2017). Children weigh the costs and rewards in altruistic decision-making. In Children's Reasoning about the Costs and Rewards of Prosocial Decisions. Symposium conducted at the biennial meeting of the *Society for Research in Child Development (SRCD)*, Austin, TX, USA.

Parkinson, C., **Liu, S.**, & Wheatley, T. (April 2013). A common cortical metric for spatial, temporal and social distance. In Social Networks & Reward. Symposium conducted at the annual meeting of the *Social & Affective Neuroscience Society (SANS)*, San Francisco, CA, USA.

Parkinson, C., **Liu, S.**, & Wheatley, T. (December 2012). The neural representation of psychological distance. Slide session conducted at the *Harvard University Social Brain Sciences Symposium*, Cambridge, USA.

POSTER
PRESENTATIONS

Gjata, N.*, Ullman, T. D., Spelke, E. S., & **Liu, S.** (July 2020). Look before you leap: Quantitative tradeoffs between peril and reward in action understanding. Poster to be presented at the 42nd Annual Meeting of the *Cognitive Science Society (CogSci)*, held virtually due to COVID-19.

Liu, S., Brooks, N. B., & Spelke, E. S. (October 2019). Origins of the concepts *cause*, *cost*, and *goal* in prereaching infants. Poster presented at the biennial meeting of the *Cognitive Development Society (CDS)*, Louisville, KY, USA.

Liu, S., *Aguirre, A., Cushman F. A., Gershman, S. J., Kool, W., and Spelke, E. S. (October 2017). Children's sensitivity to the cost of action selection. Poster presented at the biennial meeting of the *Cognitive Development Society (CDS)*, Portland, OR, USA.

Liu, S., Ullman, T. D., Tenenbaum, J. B., & Spelke, E. S. (April 2017). Ten-month-old infants infer value from effort. Poster presented at the biennial meeting of the *Society for Research in Child Development (SRCD)*, Austin, TX, USA.

Liu, S., Brooks, N. B., & Spelke, E. S. (May 2016). Pre-reaching infants expect causal agents to act efficiently without motor training. Poster presented at the biennial *International Conference on Infant Studies (ICIS)*, New Orleans, LA.

Liu, S., & Spelke, E. S. (January 2016). Continuous representations of action effi-

ciency in infancy. Poster presented at the *CEU Conference on Cognitive Development (BCCCD16)*, Budapest, Hungary.

Liu, S., & Spelke, E. S. (October 2015). Six-month-old infants represent action efficiency on a continuous scale. Poster presented at the biennial meeting of the *Cognitive Development Society (CDS)*, Columbus, OH, USA.

Liu, S., & Warneken, F. (October 2015). Rational optimism in children's social reasoning. Poster presented at the biennial meeting of the *Cognitive Development Society (CDS)*, Columbus, OH, USA.

Parkinson, C., **Liu, S.**, & Wheatley, T. (April 2013). A common neural encoding of spatial and semantic distance. Poster presented at the annual meeting of the *Cognitive Neuroscience Society (CNS)*, San Francisco, USA.

Parkinson, C., **Liu, S.**, & Wheatley, T. (October 2012). Multivoxel pattern analysis reveals a domain-general neural encoding of psychological distance. Poster presented at the annual meeting of the *Society for Neuroscience (SfN)*, New Orleans, USA.

Parkinson, C., **Liu, S.**, & Wheatley, T. (October 2012). Multivoxel pattern analysis reveals a domain-general neural encoding of psychological distance. Poster presented at the annual meeting of the *Society for Social Neuroscience (SfN satellite event)*, New Orleans, USA.

Honors and Awards

2019 Bok Center Certificate of Distinction in Teaching (Sophomore Tutorial)
2019 George W. Goethals Teaching Prize (Sophomore Tutorial)
2018 Bok Center Certificate of Distinction in Teaching (Social Psychology)
2017 Cognitive Science Society Student Travel Award
2017 Society for Research in Child Development Student Travel Award
2014 Phi Beta Kappa, Dartmouth College
2014 Escobosa Family Honors Thesis Prize in Psychology, Dartmouth College
2014 Nickerson 1964 Psychological and Brain Sciences Prize, Dartmouth College
2014 James O. Freedman Presidential Scholar, Dartmouth College
2014 Honorable Mention, NSF Graduate Research Fellowship

Teaching

2019-20 Co-Supervisor, Senior Thesis (Harvard PSY 991)
2014-20 Guest Lecturer, Lab in Early Cognitive Development (Harvard PSY 1652r)
2019 Teaching Assistant, Brains Minds and Machines Summer School
2019 Course Instructor, Sophomore Tutorial (Harvard PSY 971)
2018 Teaching Fellow, Social Psychology (Harvard PSY 15)
2017 Co-Supervisor, Independent Research (Harvard PSY 910r)

Professional Service

2019-20 Co-organizer, Harvard-Yale Workshop in Developmental Psychology (postponed due to COVID-19)
2018-9 Co-organizer, Developmental Studies Seminar (Harvard)
Reviews: Cognition, Cognitive Science, Cognitive Science Society, Developmental Science, Journal of Emerging Investigators, Journal of Experimental Child Psychology, Trends in Cognitive Sciences

Other Training

2020 Academics for Black Lives Training (<https://www.academics4blacklives.com/>)
2018 Computational Social Cognition Bootcamp (Cambridge MA)
2017 Brains, Minds & Machines Summer Course (Woods Hole, MA)

Invited Talks

2020 Colloquium, Department of Psychological and Brain Sciences, Johns Hopkins
 2019 Colloquium, Department of Psychology, Stanford
 2019 Ma Lab, NYU
 2019 Computational Cognitive Science Group, MIT
 2019 Snedeker Lab, Harvard
 2019 Social Cognitive Neuroscience Lab, MIT
 2019 Early Childhood Cognition Lab, MIT
 2019 Laboratory for Developmental Studies Seminar, Harvard
 2018 Visual Attention Lab, Harvard Medical School
 2018 Laboratory for Developmental Studies Seminar, Harvard
 2017 Early Childhood Cognition Lab, MIT
 2017 Cognition, Brain and Behavior Research Seminar, Harvard
 2017 Laboratory for Developmental Studies Seminar, Harvard
 2016 Boston Area Psychology Graduate Student Symposium, Northeastern
 2016 Center for Brain Minds and Machines Annual Retreat, MIT
 2016 Laboratory for Developmental Studies Seminar, Harvard
 2016 Boston Area Moral Cognition Group, Harvard
 2015 Laboratory for Developmental Studies Seminar, Harvard

Student Advisees

Aracely Aguirre (Harvard, Spring 2015-2017)
 Melyssa Almeida (Harvard, Fall 2020-present)
 Amelia Andrews (Tufts, Spring-Summer 2017)
 Hannah Becker (Washington University in St. Louis, Summer 2015)
 — Graduate student, University of Michigan
 Kendall Carr (Wesleyan, Summer 2019)
 — Graduate student, Wesleyan University
 Sara Dablouk (University of Bath, Fall 2018-Summer 2019)
 — Undergraduate Dissertation score 85/95. Graduate student, UCL
 Spencer Daus-Haberle (Bates, Summer 2016)
 Daisy Evariz (Harvard, Spring 2018-Spring 2019)
 Nensi Gjata (Harvard, Summer 2018-Spring 2020)
 — Thesis Student, *summa cum laude* thesis, Psychology Faculty Prize
 Gorana Gonzalez (University of Florida, Fall 2015)
 — Graduate student at UMass Amherst
 Juliet Isselbacher (Harvard, Spring 2019)
 Caroline Kerwin (Harvard, Fall 2015-Fall 2017)
 Linette Kunin (MIT, Summer 2020-present)
 Kexin Que (University of Bath, Fall 2019-present)
 — Current thesis student
 Jane Rhee (Harvard, Fall 2019)
 Jordyn Ricard (Northwestern University, Summer 2018)
 — Research assistant, Harvard
 Chrystal Spencer (Rutgers, Summer 2017)
 — Graduate student, University of Pittsburgh
 Akshita Srinivasan (University of Hyderabad, Summer 2017-2018)
 — Graduate Student, Harvard
 Connie Wong (University of Pennsylvania, Summer 2015)
 — Clinical Research Assistant, Children's National Research Institute

Technical Skills

Programming: R, Python, C, JavaScript
Statistics: R
Graphics: Illustrator, Blender

References

Rebecca Saxe (Dept of Brain and Cognitive Sciences, MIT), saxe@mit.edu
Elizbaeth Spelke (Dept of Psychology, Harvard), spelke@wjh.harvard.edu
Josh Tenenbaum (Dept of Brain and Cognitive Sciences, MIT), jbt@mit.edu
Susan Carey (Dept of Psychology, Harvard), scarey@wjh.harvard.edu
Laura Schulz (Dept of Brain and Cognitive Sciences, MIT), lschulz@mit.edu