# **Emily G. Liquin**

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# ACADEMIC EMPLOYMENT

2021-Present **Postdoctoral Fellow** 

Department of Psychology, New York University Advisors: Dr. Todd Gureckis & Dr. Marjorie Rhodes

### **EDUCATION**

2021 Ph.D., Cognitive Psychology

**Princeton University** 

Dissertation: Imperfect inquiry: How curiosity and satisfaction guide learning

Advisors: Dr. Tania Lombrozo & Dr. Alison Gopnik

UC Berkeley (2016-2018) → Princeton University (2018-2021)

2020 M.A., Cognitive Psychology

**Princeton University** 

2016 **B.A., Cognitive Science and Psychology** (summa cum laude; departmental honors)

**Northwestern University** 

Thesis: Touchscreen devices and young children: Symbolic understanding, the video

deficit, and increasing symbolic competence

Advisor: Dr. David Uttal

# **GRANTS & FELLOWSHIPS**

2022-2024	NSF SBE Postdoctoral Research Fellowship (\$138,000) "Investigating the cognitive mechanisms underlying children's question asking"
2020	Graduate Student Research Grant, Princeton Program in Cognitive Science (\$5,000)
2019-2020	Graduate Fellow, Princeton Program in Cognitive Science (\$1,000)
2016-2021	NSF Graduate Research Fellowship (\$102,000)
2016-2018	Berkeley Fellowship for Graduate Study (\$56,000)
2015	Summer Undergraduate Research Grant, Northwestern University (\$3,000)
2015	Benton J. Underwood Summer Undergraduate Research Fellowship
2015	Fellowship for International Study, Northwestern University (\$1,000)
2014	Cognitive Science Undergraduate Research Fellowship, Northwestern University (\$3,000)

### **HONORS & AWARDS**

2021	Psychology Prize (best student paper), Society for Philosophy and
2019	Graduate Student Travel Award, Society for Philosophy and Psychology
2019	Graduate Student Travel Award, Society for Research in Child Development
2018	Glushko Student Travel Award, Cognitive Science Society
2018	Graduate Student Travel Award, Society for Philosophy and Psychology
2016	Franklin N. & Lee L. Corbin Prize (for outstanding senior attending graduate or professional school), Northwestern University
2015	Phi Beta Kappa, Northwestern University

### REFEREED JOURNAL ARTICLES

- 1. Lombrozo, T. & Liquin, E. G. (2023). Explanation is effective because it is selective. *Current Directions in Psychological Science*, *32*(3), 212–219. [paper]
- 2. Lewry, C., Gorucu, S., Liquin, E. G., & Lombrozo, T. (2023). Minimally counterintuitive stimuli trigger greater curiosity than merely improbable stimuli. *Cognition*, *230*, 105286. [paper] [preprint]
- 3. Hart, Y., Kosoy, E., Liquin, E. G., Leonard, J. A., Mackey, A. P., & Gopnik, A. (2022). The development of creative search strategies. *Cognition*, *225*, 105102. [paper] [preprint]
- 4. Liquin, E. G. & Lombrozo, T. (2022). Motivated to learn: An account of explanatory satisfaction. *Cognitive Psychology*, *132*, 101453. [paper]
- 5. Liquin, E. G. & Gopnik, A. (2022) Children are more exploratory and learn more than adults in an approach-avoid task. *Cognition*, *218*, 104940. [paper] [preprint]
- 6. Liquin, E. G., Metz, S. E., & Lombrozo, T. (2020) Science demands explanation, religion tolerates mystery. *Cognition*, *204*, 104398. [paper]
- 7. Liquin, E. G. & Lombrozo, T. (2020) Explanation-seeking curiosity in childhood. *Current Opinion in Behavioral Sciences*, *35*, 14-20. [paper]
- 8. Liquin, E. G. & Lombrozo, T. (2020) A functional approach to explanation-seeking curiosity. *Cognitive Psychology*, *119*, 101276. [paper]
- 9. Liquin, E. G. & Lombrozo, T. (2018). Structure-function fit underlies the evaluation of teleological explanations. *Cognitive Psychology*, *107*, 22-43. [paper]

### MANUSCRIPTS UNDER REVIEW / IN PREPARATION

- 1. Metz, S. E., Liquin, E. G., & Lombrozo, T. (in revision). Distinct profiles for beliefs about religion versus science. *Cognitive Science*.
- 2. Liquin, E. G., Callaway, F. & Lombrozo, T. (in prep). Curiosity is an imperfect guide to learning.

### REFEREED CONFERENCE PROCEEDINGS

- 1. Liquin, E. G., Luzuriaga, N., & Gureckis, T. M. (accepted). Teaching and learning through pedagogical environment design. In *Proceedings of the 45th Annual Conference of the Cognitive Science Society*. Cognitive Science Society.
- 2. Liquin, E. G. & Gureckis, T. M. (2022). Where questions come from: Reusing old questions in new situations. In J. Culbertson, A. Perfors, H. Rabagliati, & V. Ramenzoni (Eds.) *Proceedings of the 44th Annual Conference of the Cognitive Science Society*. Cognitive Science Society. [paper]
- 3. Liquin, E. G., Callaway, F., & Lombrozo, T. (2021). Developmental change in what elicits curiosity. In T. Fitch, C. Lamm, H. Leder, & K. Teßmar-Raible (Eds.), *Proceedings of the 43rd Annual Conference of the Cognitive Science Society* (pp. 1360- 1366). Cognitive Science Society. [paper]
- 4. Liquin, E. G., Callaway, F., & Lombrozo, T. (2020). Quantifying curiosity: A formal approach to dissociating causes of curiosity. In S. Denison., M. Mack, Y. Xu, & B.C. Armstrong (Eds.), *Proceedings of the 42nd Annual Conference of the Cognitive Science Society* (pp. 309-315). Cognitive Science Society. [paper]
- 5. Liquin, E. G. & Lombrozo, T. (2019). Inquiry, theory-formation, and the phenomenology of explanation. In A.K. Goel, C.M. Seifert, & C. Freksa (Eds.), *Proceedings of the 41st Annual Conference of the Cognitive Science Society* (pp. 664-670). Cognitive Science Society. [paper]
- 6. Liquin, E. G. & Lombrozo, T. (2018). Determinants and consequences of the need for explanation. In T.T. Rogers, M. Rau, X. Zhu, & C.W. Kalish (Eds.), *Proceedings of the 40th Annual Conference of the Cognitive Science Society* (pp. 696-701). Cognitive Science Society. [paper]
- 7. Liquin, E. G., Metz, S. E., & Lombrozo, T. (2018). Explanation and its limits: Mystery and the need for explanation in science and religion. In T.T. Rogers, M. Rau, X. Zhu, & C.W. Kalish (Eds.), *Proceedings of the 40th Annual Conference of the Cognitive Science Society* (pp. 2065-2070). Cognitive Science Society. [paper]
- 8. Liquin, E. G. & Lombrozo, T. (2017). Explain, explore, exploit: Effects of explanation on information search. In G. Gunzelmann, A. Howes, T. Tenbrink, & E. J. Davelaar (Eds.), *Proceedings of the 39th Annual Conference of the Cognitive Science Society* (pp. 2598- 2603). Cognitive Science Society. [paper]

### **CONFERENCE PRESENTATIONS**

# **Talks**

- 1. Liquin, E. G., Luzuriaga, N. & Gureckis, T. (2023, July). *Teaching and Learning through Pedagogical Environment Design*. Talk to be presented at the annual meeting of the Cognitive Science Society, Sydney, Australia.
- 1. Liquin, E. G., Tsai, B., Rhodes, M. & Gureckis, T. (2023, June). *The origins of information-seeking questions*. Talk to be presented at the annual meeting of the Society for Philosophy and Psychology, Pittsburgh, PA.

- 2. Liquin, E. G., & Gureckis, T. (2022, July). Where questions come from: Reusing old questions in new situations. Talk presented at the annual meeting of the Cognitive Science Society, Toronto, ON. [talk video]
- 3. Liquin, E. G., Callaway, F., & Lombrozo, T. (2021, June). *Drivers of curiosity: A computational account.* Talk presented at "Minds at Play" pre-conference workshop at the annual meeting of the Cognitive Science Society, virtual.
- 4. Liquin, E. G., & Lombrozo, T. (2021, June). *Explanatory satisfaction tracks epistemic success and motivates inquiry*. Talk presented at the annual meeting of the Society for Philosophy and Psychology, virtual. Finalist for William James Prize (best student paper).
- 5. Liquin, E. G., Callaway, F., & Lombrozo, T. (2021, April). *Developmental change in the triggers of curiosity*. Talk presented at the biennial meeting of the Society for Research in Child Development, virtual.
- 6. Liquin, E. G., Callaway, F., & Lombrozo, T. (2020, July). *Quantifying curiosity: A formal approach to dissociating causes of curiosity.* Talk presented at the annual meeting of the Cognitive Science Society, virtual. [talk video]
- Liquin, E. G. & Lombrozo, T. (2019, July). *Inquiry, theory-formation, and the phenomenology of explanation*. Talk presented at the annual meeting of the Cognitive Science Society, Montreal, OB.
- 8. Liquin, E.G. & Lombrozo, T. (2019, July). *Causal structure modulates the preference for simple explanations*. Talk presented at the annual meeting of the Society for Philosophy and Psychology, San Diego, CA.
- 9. Liquin, E. G. & Gopnik, A. (2019, March). *Learning from approach-avoid decisions: Children explore and learn more than adults.* Talk presented at the biennial meeting of the Society for Research in Child Development, Baltimore, MD.
- 10. Liquin, E. G. & Lombrozo, T. (2019, March). *Determinants of explanation-seeking curiosity across development*. Talk presented at the biennial meeting of the Society for Research in Child Development, Baltimore, MD.
- 11. Liquin, E. G. & Lombrozo, T. (2018, July). *Determinants and consequences of the need for explanation*. Talk presented at the annual meeting of the Cognitive Science Society, Madison, WI.
- 12. Liquin, E. G. & Lombrozo, T. (2018, July). *What demands an explanation? Expertise and utility drive explanation search*. Talk presented at the annual meeting of the Society for Philosophy and Psychology, Ann Arbor, MI.
- 13. Liquin, E. G. & Lombrozo, T. (2017, June). *Function over mechanism: Why teleological explanations are so compelling.* Talk presented at the annual meeting of the Society for Philosophy and Psychology, Baltimore, MD.

#### Posters

1. Liquin, E. G., Tsai, B., Rhodes, M. & Gureckis, T. M. (2023, May). *Balancing creativity and reuse in human question asking*. Poster presented at the Curiosity, Creativity, and Complexity Conference, New York, NY.

- 2. Liquin, E. G., Callaway, F., Lewry, C. & Lombrozo, T. (2022, April). *A formal approach to dissociating triggers of children's curiosity*. Poster presented at the biennial meeting of the Cognitive Development Society, Madison, WI.
- 3. Liquin, E. G., Callaway, F., & Lombrozo, T. (2021, July). *Developmental change in what elicits curiosity*. Poster presented at the annual meeting of the Cognitive Science Society, virtual.
- 4. Kosoy, E., Hart, Y., Liquin, E. G., Leonard, J., Mackey, A., & Gopnik, A. (2021, June). *Creative foraging in children*. Poster presented at the annual meeting of the Society for Philosophy and Psychology, virtual.
- 5. Hart, Y., Kosoy, E., Liquin, E. G., Leonard, J., Mackey, A., & Gopnik, A. (2020, July). *The development of creative search strategies*. Poster presented at the annual meeting of the Cognitive Science Society, virtual.
- 6. Liquin, E. G., Gorucu, S., & Lombrozo, T. (2019, October). *Developmental changes in future-oriented explanation search*. Poster presented at the biennial meeting of the Cognitive Development Society, Louisville, KY.
- 7. Liquin, E. G. & Lombrozo, T. (2019, July). *Causal structure and probability information modulate the preference for simple explanations*. Poster presented at the annual meeting of the Cognitive Science Society, Montreal, QB.
- 8. Metz, S. E., Liquin, E. G., & Lombrozo, T. (2019, July). *The varieties of belief: Epistemic differences between scientific and religious beliefs.* Poster presented at the annual meeting of the Society for Philosophy and Psychology, San Diego, CA.
- 9. Liquin, E. G., Metz, S. E., & Lombrozo, T. (2018, July). *Explanation and its limits: Mystery and the need for explanation in science and religion*. Poster presented at the annual meeting of the Cognitive Science Society, Madison, WI.
- 10. Liquin, E. G. & Gopnik, A. (2018, July). *Learning from approach-avoid decisions in children and adults*. Poster presented at "Understanding Exploration-Exploitation Tradeoffs" pre-conference workshop at the annual meeting of the Cognitive Science Society, Madison, WI.
- 11. Liquin, E. G. & Gopnik, A. (2017, October). *4- to 8-year-olds balance exploration and exploitation*. Poster presented at the biennial meeting of the Cognitive Development Society, Portland, OR.
- 12. Liquin, E. G. & Lombrozo, T. (2017, July). *Explain, explore, exploit: Effects of explanation on information search*. Poster presented at the annual meeting of the Cognitive Science Society, London, England.
- 13. Liquin, E. G., Sheehan, K. J., & Uttal, D. H. (2017, April). *Symbols and screens: Young children are better at using a paper map than a touchscreen map*. Poster presented at the biennial meeting of the Society for Research in Child Development, Austin, TX.
- 14. Sheehan, K. J., Liquin, E. G., Hamilton, L., & Uttal, D. H. (2016, May). *Taking a break promotes symbolic understanding in 3-year-old children*. Poster presented at the Association for Psychological Science 28th Annual Convention, Chicago, IL.

- 15. Sheehan, K. J., Liquin, E. G., & Uttal, D. H. (2015, March). *Delay improves 3-year-olds' ability to use a novel symbol, with and without instructions*. Poster presented at the biennial meeting of the Society for Research in Child Development, Philadelphia, PA.
- 16. Liquin, E., DeHaas, M., Gustafson, C., Sheehan, K. J., & Uttal, D. H. (2014, May). *Overall similarity facilitates young children's symbolic understanding*. Poster presented at the annual meeting of the Midwestern Psychological Association, Chicago, IL.

### INVITED TALKS

- 1. How curiosity guides us towards good explanations (2022). Cognitive Development Center Seminar, Central European University
- 2. A formal approach to dissociating triggers of curiosity across development (2021). Language and Cognition Lab, Stanford University
- 3. The role of curiosity and satisfaction in learning from inquiry (2020). *Affective Brain Lab Seminar, University College London*
- 4. Developmental changes in curiosity, exploration, and learning (2020). Developmental Psychology Brownbag, Stanford University
- 5. Explanation seeking and satisfaction within the process of inquiry (2019). Early Childhood Cognition Lab Meeting, Massachusetts Institute of Technology
- 6. Explanation seeking and satisfaction within the process of information search (2019). *ConCats (Concepts and Categories) Seminar, New York University*
- 7. A functional approach to explanation-seeking curiosity (2019). *Cognitive Science Graduate Seminar, Rutgers University*
- 8. How do children balance information and reward in exploratory decision making? (2017). Language and Cognitive Development Lab Meeting, UC Berkeley

# MENTORING / TEACHING EXPERIENCE

# Mentoring

- Archisha Murthy, undergraduate at NYU (2023-Present)
- Nicole Luzuriaga, undergraduate at NYU (2022-Present)
- Barron Tsai, undergraduate at NYU (2022-2023)
- Sera Gorucu, undergraduate at Princeton (2019-2020)
- Prsni Patel, undergraduate at Franklin & Marshall (2019) → PhD student at Tufts
- Isha Shah, undergraduate at UC Berkeley (2019)
- Kaitlan Tseng, undergraduate at UC Berkeley (2018)
- Rachel Marcus, undergraduate at UC Berkeley (2018-2019) → PhD student at Penn State
- Sarah Yang, undergraduate at Duke (2018)
- Cortland Jell, undergraduate at UC Berkeley (2017-2018)
- Lena Gavenas, undergraduate at UC Berkeley (2017-2018)

- Alicia Lunardhi, undergraduate at UC San Diego (2017)
- Ian Bicket, undergraduate at UC Santa Cruz (2017)
- Katie Reed, undergraduate at UC Santa Cruz (2017)
- Heather Robinson, undergraduate at Haverford (2017)
- Nicole Breer, undergraduate at UC Berkeley (2016-2018) → MA at University of Virginia

- Daniel Petrie, undergraduate at UC Berkeley (2016-2017) → PhD student at Penn State

# **Teaching**

Fall 2019 Assistant in Instruction, Developmental Psychology

Instructor: Dr. Casey Lew-Williams

Princeton University

Spring 2018, Graduate Student Instructor, Sense and Sensibility and Science (interdisciplinary course

Spring 2017 on decision making)

Instructors: Drs. Tania Lombrozo, John Campbell, and Saul Perlmutter

University of California, Berkeley

Fall 2017 Guest Lecturer, Quantitative Analysis and Coding Knowledge Workshops

University of California, Berkeley

Lecture topics: Basic Statistics in R, Plotting in R with ggplot2, Intro to Online

**Experiments** 

### **SERVICE**

### **Professional Service**

Fall 2022- Coordinator, ConCats (Concepts and Categories) talk series

Present New York University

Fall 2021, Editor, *Application Statement Feedback Program* (https://www.asfp.io/)
Fall 2022 Provided feedback on personal statements of underrepresented PhD applicants

Spring-Fall 2019 Co-Coordinator, Neuroscience and Social Decision Making (NSDM) talk series

Princeton University

Fall 2017 Co-Coordinator, Quantitative Analysis and Coding Knowledge (QuACK) workshops

(Statistics and coding workshop series for first-year graduate students in psychology)

University of California, Berkeley

### Ad Hoc Reviewing

<u>Journals:</u> Cognition; Cognitive Psychology; Child Development; Cognitive Science; Journal of Experimental Psychology: Learning, Memory, and Cognition; Open Mind: Discoveries in Cognitive Science; PLOS ONE

<u>Conferences:</u> The Annual Meeting of the Cognitive Science Society; The Annual Meeting of the Society for Philosophy and Psychology

# PROFESSIONAL MEMBERSHIPS

Cognitive Science Society
Cognitive Development Society
Society for Philosophy and Psychology

# **REFERENCES**

**Dr. Tania Lombrozo,** Professor, Department of Psychology, Princeton University <a href="mailto:lombrozo@princeton.edu">lombrozo@princeton.edu</a>

**Dr. Alison Gopnik**, Professor, Department of Psychology, University of California, Berkeley <a href="mailto:gopnik@berkeley.edu">gopnik@berkeley.edu</a>

**Dr. Todd Gureckis**, Professor, Department of Psychology, New York University todd.gureckis@nyu.edu