

Anna Leshinskaya

Curriculum Vitae

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Education

PhD 2009—2015
Psychology (Cognition, Brain & Behavior)
Harvard University, Cambridge, MA

Thesis: *Principled neural partitions among aspects of artifact and action concepts*
Committee: Dr. Alfonso Caramazza (supervisor), Dr. Susan Carey, Dr. Marius Peelen, Dr. Joshua Greene

Bachelor of Arts, Honors 2004—2008
Cognitive Science
Carleton University, Ottawa, Canada

Thesis: *Children's representational understanding in moving word and false word tasks*
Supervisor: Dr. Deepthi Kamawar

Visiting Student 2006—2007
Edinburgh University, Edinburgh, UK

Employment

Research Lead in Human Cognition and AI June 2023—*present*
AI Objectives Institute
San Francisco, CA

Assistant Project Scientist June 2021—June 2023
Center for Neuroscience, University of California, Davis
Advisor: Dr. Charan Ranganath

Post-Doctoral Fellow June 2019— June 2021
Center for Neuroscience, University of California, Davis
Advisor: Dr. Charan Ranganath

Post-Doctoral Fellow June 2015—June 2019
Center for Cognitive Neuroscience, University of Pennsylvania
Advisor: Dr. Sharon L. Thompson-Schill

Assistant in Neuropsychology

Sept. 2008—Sept. 2009

Dr. Denise Klein, Neuropsychology Department, Montreal Neurological Institute,
Montreal, Canada

Research Assistant

May 2008—Sept. 2009

Dr. Natalie Phillips, Centre for Research on Human Development, Concordia
University, Montreal, Canada

Grants

2020 - 2024

NSF Cognitive Neuroscience #2022685

Mechanisms for causal and non-causal predictive learning

Principal Investigator (co-PIs: Drs. C. Ranganath & E. Boorman)

\$657,263

2018 - 2019

John Templeton Foundation/Summer Seminars in Neuroscience and Philosophy

The Need for Patterns: Spontaneous Statistical Computation and its Role in Cognition.

\$10,800

2014 - 2015

Mind, Brain, and Behavior Graduate Student Research Grant

Concepts of Functions and Artifacts.

\$5,600

Teaching & Supervision**Teaching Fellow**

Sept—Dec 2013

Dr. Daniel Gilbert, Psychological Science, Psychology Department, Harvard
University

Feb—May 2012

Dr. Alfonso Caramazza, Cognitive Neuroscience, Psychology Department,
Harvard University

June—July 2011

Dr. Alfonso Caramazza, Windows into the Structure of the Mind and Brain, Harvard
Summer Abroad Program, Trento, Italy

Student Supervision

Eli Elster, undergraduate student

Himanshu Chaudhary, junior specialist

Radhika Dhanak, junior specialist

Mateo Pitkin, ASPIRE program student

Mitchell Ngyuen, junior specialist

Mira Bajaj, summer research fellowship & honors thesis

Jeni Stiso, graduate rotation

Cristina H. Leon, independent study & summer research fellowship

Domonique Roberts-Mack, independent study

Alan Rozet, research assistant

Isobel Green, research assistant
Gabbie Giugliano, research assistant

Manuscripts

- Leshinskaya, A. & Thompson-Schill, S.L. (under review). Computations of contingency guide how experience is encoded in memory: backward blocking in statistical learning. <https://psyarxiv.com/c3jpn>
- Leshinskaya, A., Elster, E.S., Boorman, E., and Ranganath, C. (in preparation). Divergent signatures of causal judgment and relational memory.

Publications

- Leshinskaya, A., Nguyen, M. A., & Ranganath, C. (in press). Integration of event experiences to build relational memory in the human brain. *Cerebral Cortex*.
- Leshinskaya, A., Bajaj, M. & Thompson-Schill, S.L. (2023). Novel objects with causal event schemas elicit selective responses in tool- and hand-selective lateral occipito-temporal cortex. *Cerebral Cortex*. 33(9): 5557–5573.
- Leshinskaya, A., Nguyen, M. A., & Ranganath, C. (2022). Integration of event experiences to build relational memory in the human brain. In J. Culbertson, A. Performs, H. Rabagliati, and V. Ramenzoni. *Proceedings of the 44th Meeting of the Cognitive Science Society*. Toronto, Ontario: Cognitive Science Society.
- Leshinskaya, A., & Lambert, E. (2022). Implications from the philosophy of concepts for the neuroscience of memory systems. In F. De Brigard & W. Sinnott-Armstrong (Eds.), *Neuroscience and Philosophy*. Cambridge, MA: MIT Press.
- Leshinskaya A., Bajaj, M., & Thompson-Schill, S.L. (2020). Incidental binding between predictive relations. *Cognition*. 199 (2020): 104238.
- Leshinskaya, A., Wurm, M. F., & Caramazza, A. (2020). Concepts of actions and their objects. In M. Gazzaniga, G. R. Mangun, & D. Poeppel. *The Cognitive Neurosciences, 6th edition*, 757–765.
- Leshinskaya, A. & Thompson-Schill, S.L. (2020). Transformation of event representations along middle temporal gyrus. *Cerebral Cortex*, 30(5), 3148–3166.
- Leshinskaya A., Lambert, E. & Thompson-Schill, S.L. (2019). Algebraic patterns as ensemble representations. In A.K. Goel, C. M. Seifert, & C. Freska (Eds.), *Proceedings of the 41st Annual Conference of the Cognitive Science Society* (pp. 646-650). Montreal, QB: Cognitive Science Society.
- Leshinskaya, A., & Thompson-Schill, S.L. (2019). From the structure of experience to concepts of structure: how the concept 'cause' applies to objects and events. *Journal of Experimental Psychology: General*, 148(4), 619-643.

- Leshinskaya, A. & Thompson-Schill, S.L. (2018). Inferences about uniqueness in statistical learning. In T.T. Rogers, M. Rau, X. Zhu, & C. W. Kalish (Eds.), *Proceedings of the 40th Annual Meeting of the Cognitive Science Society* (pp 2020-2025). Austin, TX: Cognitive Science Society.
- Leshinskaya, A., Contreras, J.M., Caramazza, A. & Mitchell, J.P. (2017). Neural representations of belief concepts: A representational similarity approach to social semantics. *Cerebral Cortex*, 27 (1): 344-357.
- Leshinskaya, A., & Caramazza, A. (2016). For a cognitive neuroscience of concepts: Moving beyond the grounding issue. *Psychonomic Bulletin & Review*, 23(4), 991–1001.
- Leshinskaya, A., & Caramazza, A. (2015). Abstract categories of functions in anterior parietal lobe. *Neuropsychologia*, 76, 27–40.
- Leshinskaya, A. & Caramazza, A. (2014). Nonmotor aspects of action concepts. *Journal of Cognitive Neuroscience*, 26(12), 2863–2879.
- Leshinskaya A. & Caramazza A. (2014). Organization and Structure of Conceptual Representations. V. Ferreira, M. Goldrick, & M. Miozzo (Eds.) *The Oxford handbook of language production*. Oxford: Oxford University Press.

Published Conference Abstracts

- Leshinskaya, A., Elster, E., & Ranganath, C. (2022). Patterns of causal judgements diverge from patterns of recall: a test of the outcome density effect. In J. Culbertson, A. Perfors, H. Rabagliati, and V. Ramenzoni. *Proceedings of the 44th Meeting of the Cognitive Science Society*. Toronto, Ontario: Cognitive Science Society.
- Leshinskaya, A., Bajaj, M., & Thompson-Schill, S.L. (2020). Tool-selective lateral temporal cortex responds to objects with causal effects. *Journal of Vision*, 20 (11), p 1417.
- Leshinskaya, A. & Thompson-Schill, S.L. (2019). Transformation of event representations along middle temporal gyrus. *Journal of Vision*, 19 (10), p 91.
- Leshinskaya, A. & Thompson-Schill, S.L. (2018). Higher order structure in visual statistical learning. *Journal of Vision*, 18 (10), p 262.
- Leshinskaya, A. & Thompson-Schill, S.L. (2017). Structured knowledge and novel object kinds can be inferred from visual event streams. *Journal of Vision*, 17 (10), p 492.
- Leshinskaya, A., & Caramazza A. (2015). Visual search speed is influenced by differences in shape arbitrariness. *Journal of Vision*, 15 (12), p 1165.

Invited Talks

Leshinskaya, A. (2023). Integration of event experiences to build relational knowledge in the human brain. Talk presented at LearnMem, April 30. Huntington Beach, CA.

Leshinskaya, A. (2023). Relational encoding drives sensory abstraction in lateral temporal cortex. Talk presented at the Annual Meeting of the Cognitive Neuroscience Society, March 27. San Francisco, CA.

Leshinskaya, A. (2023). Algorithms for relational memory formation. Talk presented at the Park City Winter Conference on the Neurobiology of Learning and Memory, Jan 5. Park City, UT.

Leshinskaya, A., (2022). Building relational knowledge from experiences of events: how learning impacts the brain's episodic and semantic systems. Talk presented at the Neuroimaging Community Seminar, Washington University, Sept 16. St. Louis, MI.

Leshinskaya, A., (2022). Models of predictive memory for brain and behavior. Talk presented at the Memory and Attention Group, University of Chicago, July 13th, Chicago IL.

Leshinskaya, A., (2022). Neural organizing principles of concept representations. Talk presented at the Language Neurobiology Group, UCSF. May 11. San Francisco, CA.

Leshinskaya, A. (2020). How learned relations influence neural responses to objects and events. Talk presented at the fMRI Brown Bag, Dartmouth Brain Imaging Center, Aug 14, Dartmouth University, Hanover NH.

Leshinskaya, A., Lambert, E., & Thompson-Schill, S.L. (2019). Algebraic patterns as ensemble representations. Talk presented at the 41st Annual Conference of the Cognitive Science Society, July 26, Montreal, Quebec, Canada.

Leshinskaya, A. & Thompson-Schill, S.L. (2019). Transformation of event representations along middle temporal gyrus. Talk presented at the Annual Meeting of the Vision Sciences Society, May 19, St Pete Beach, Florida.

Leshinskaya, A. (2019). How relations among events inform concepts of objects. Talk presented at the Zuckerman Institute, Columbia University, Mar 12, New York, NY.

Leshinskaya, A. (2019). How relations among events inform concepts of objects. Talk presented at the Psychology Department, Northeastern University, Jan 31, Boston MA.

Leshinskaya, A. (2018). How relations among events inform concepts of objects. Talk presented at the Cognitive Neuroscience Talk Series, Dec 3, Johns Hopkins University, Baltimore, MD.

Leshinskaya, A. & Thompson-Schill, S.L. (2018). Inferences about uniqueness in statistical learning. Talk presented at the Cognitive Computational Neuroscience Conference, September 5 – 8, Philadelphia, PA

Leshinskaya, A. (2018). Action concepts. Talk presented at the Kavli Summer Institute in Cognitive Neuroscience, June 8-10, Resort at Squaw Creek, Olympic Valley, CA.

Leshinskaya, A. (2018). From the structure of experience to concepts of structure. Talk presented at the Cognition Seminar Brown Bag, Cognitive, Linguistic & Psychological Sciences, March 9, Brown University, Providence, RI.

Leshinskaya, A., Contreras J.M., Caramazza A. & Mitchell J.P. (2017). Representations of belief concepts and the neural organization of abstract semantics. Talk presented at the meeting of the Society for Neuroscience, November 11-15, Washington, DC.

Leshinskaya, A. & Caramazza A. (2014). Abstract categories of functions in anterior parietal lobe. Talk presented at the Rovereto Workshop on Concepts, Actions and Objects, May 10 2014, Rovereto, Italy.

Awards

Vision Sciences Society Travel Award	2020
Scholarship to attend Summer Seminar in Neuroscience and Philosophy, Duke University	2018
Scholarship to attend Center for Brains, Minds and Machines (MIT) Summer Course	2016
Concepts, Actions and Objects Workshop Abstract Award	2014
Natural Sciences and Engineering Council (NSERC) Post-Graduate Scholarship	2010-2014
NSERC Alexander Graham Bell Canada Graduate Scholarship (declined)	2009
NSERC Undergraduate Student Research Award	2008
Queen Elizabeth II Undergraduate Scholarship	2004-2008
Claude Bissell Undergraduate Scholarship	2004-2008

Professional Memberships

Society for Neuroscience; Vision Sciences Society; Cognitive Science Society; Cognitive Neuroscience Society

Ad hoc Reviewing

Cerebral Cortex; Cognitive Psychology; Journal of Cognitive Neuroscience; Journal of Neuroscience; Scientific Reports; NeuroImage; Cognitive Science Society

Service

Founder, Neuwrite Davis *2021—present*
Science communication workshop series

Member of Organizing Committee *2017—2019*
mindCORE Professional Development Committee, University of Pennsylvania

Member of Organizing Committee *2017—2018*
Council for Women of Penn Psychology, University of Pennsylvania

Founder, Neuwrite Philadelphia *2015—2019*
Science communication workshop series

Organizer, Concepts Seminar *2012—2015*
Workshop funded by the Graduate School of Arts and Sciences, Harvard University

Member of Board of Directors *2012—2015*
MIT Outing Club

Dudley House Fellow *2011—2013*
Graduate School of Arts and Sciences, Harvard University