

Moshe Poliak
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Research Interests

Sentence processing, noisy channel processing, structural prior, structural similarity, prosody, statistical methods.

Education

Massachusetts Institute of Technology

Ph.D student in Brain and Cognitive Sciences

2022 – present

Advisor: Edward Gibson

Harvard University

2018 – 2022

A.B in Psychology, summa cum laude

Thesis Advisor: Jesse Snedeker

Research Experience

The Language Lab at MIT (PI: Edward Gibson)

Research Assistant

2021 – 2022

Extended a class project on Noisy Channel Processing in Russian into an independent project with Dr. Edward Gibson, Dr. Rachel Ryskin, and Mika Braginsky. Designed the experiment; wrote preregistration; created stimuli; programmed experiment with Python and Qualtrics and recruited participants on Prolific; analyzed data with Frequentist and Bayesian approaches; currently writing manuscript for publication.

Language Development Laboratory (PI: Jesse Snedeker)

Research Assistant, Thesis Student

2020 – 2022

As a thesis student: iteratively developed the study questions and data analysis. The project compares three EEG data analysis methods (mean amplitude, cluster mass, neural decoding) in resolving fundamental problems in linguistic EEG.

As a research assistant: edited audio stimuli, programmed experiments, collected EEG data, and analyzed data on projects that employ the visual world paradigm or the EEG story time paradigm.

Implicit Social Cognition Laboratory (PI: Mahzarin Banaji)

Research Assistant

2019 – 2022

Developed research questions; designed and coded online experiments with reaction-time measures and questionnaires; analyzed data; interpreted results; reported on experiments in presentations and in writing; created educational materials on various media targeted at the general public.

Conference Presentations

- Poliak, M.**, Fang, X., Ali, M., Bergen, L., Gibson, E. (2023). Corrective Prosody is Semantic, not Information Theoretic: An Online Speech Production Study. Poster at the 36th Annual CUNY Conference on Human Sentence Processing.
- Chen, A.*, Hofer, M.*, **Poliak, M.**, Zaslavsky, N., & Levy R. (2022). The emergence of discrete and systematic communication in a continuous signal–meaning space. Poster at the 44 Annual Meeting of Cognitive Science Society (CogSci).
- Poliak, M.**, Ryskin, R., Braginsky, M., & Gibson, E. (2022). Effects of the structural prior on noisy-channel inference: evidence from Russian. Poster at the 35th Annual Conference in Human Sentence Processing.
- Poliak, M.**, Yacovone, A., & Snedeker, J. (2022). Between you and me: Use ERP decoding when between-participants variation is high. Poster at the 35th Annual Conference in Human Sentence Processing.
- Poliak, M.**, Morehouse, K., & Banaji, M. (2021). Gender and Judgments of Fame: Responses to “Noise” Are Sensitive to Local, Not Global, “Signal”. Poster presentation at the APS Annual Convention conference.
- Yacovone, A., **Poliak, M.**, Koya, H., & Snedeker, J. (2021). ERP decoding shows bilinguals represent the language of a code-switch after lexical processing. Poster at the 34th Annual CUNY Conference on Human Sentence Processing.

* Co-first authors

Invited Talks

Invited Speaker at *Language and Cognition* (Harvard). Title of talk: Cross-Linguistic Noisy Channel Processing: Investigations in the Structural Prior.

Awards and Honors

- Phi Beta Kappa Inductee, Alpha Iota Chapter, Junior 24
- Derek Bok Center Certificate of Distinction in Teaching (Fall 2020, Fall 2019)
- Detur Book Prize for academic achievement (2019)

Grants and Funding

- Summer Research Funding, Patricia King Fellowship Program and Deland Fund for Undergraduate Research, Harvard College Research Program, 2021
- Conference Funding, Horne fund, Harvard College Research Program, 2021
- Undergraduate Research Scholars Award, Institute for Quantitative Social Science, Harvard University, 2021
- Summer Research Fellowship, Building Learning through Inquiry in the Social Sciences, Harvard University, 2019

- Undergraduate Research Scholars Award, Institute for Quantitative Social Science, Harvard University, 2019

Teaching and Mentoring

MIT Undergraduate Research Opportunities Program (UROP)

Supervised undergraduate scientists in research.

Advisees: Hannah Kimura (2023-), Titus Roesler (2023-)

Harvard University Teaching Fellow

Taught section, held office hours, created educational materials, and assessed students' performance in several courses.

<i>Introduction to Computer Science</i> , Harvard College	Fall 2019, Fall 2020
<i>Introduction to Artificial Intelligence with Python</i> , Harvard Summer School	2020
<i>Web-Programming with Python and JavaScript</i> , Harvard Summer School	2020
<i>Computer Science for Managers</i> , Harvard Business School	Spring 2020

Harvard College Peer Advising Fellow

Advised first-year students in their adjustment to life in college.

Professional Development

Diversity and Inclusion Badge Program

Fall 2022

A series of online DEI courses

Volunteering and Service

BCS Application Assistance Program

Fall 2022

Skills

Human Languages: Russian (native), Hebrew (native), English (fluent), Arabic (MSA, proficient)

Computer Languages: R, Python, MATLAB, JavaScript, HTML, CSS, PHP, SQL, C, GIT

Software: PRAAT, SoX, Qualtrics, EC2, EEGLAB

Interests and Hobbies: Vocal performance (classical and heavy metal), film, oenology, figure skating.