

Moshe Poliak

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Education

Massachusetts Institute of Technology	2022 – present
<i>Ph.D. Student in Cognitive Sciences. Advisor: Ted Gibson</i>	Cambridge, MA
Harvard University	2018 – 2022
<i>A.B. in Psychology. Summa cum laude. Thesis advisor: Jesse Snedeker</i>	Cambridge, MA

Journal Publications

- Ozernov-Palchik, O., O'Brien, A. M., Lee, E. J., Richardson, H., Romeo, R., **Poliak, M.**, ... & Fedorenko, E. (2026). Precision fMRI reveals that the language network exhibits adult-like left-hemispheric lateralization by 4 years of age. *Nature Communications*, 17, 6505.
- Casto, C., **Poliak, M.**, Tuckute, G., Small, H., Sherlock, P., Wolna, A., ... & Fedorenko, E. (2026). The cerebellar components of the human language network. *Neuron*, 114(8), 1504–1523.e11.
- Poliak, M.**, Malik-Moraleda, S., & Gibson, E. (2026). Rational language comprehension depends on priors about both meaning and structure. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 52(2), 307–322.
- Poliak, M.**, Chen, C., & Gibson, E. (2025). Word and construction probabilities explain the acceptability of certain long-distance dependency structures. *Cognition*, 265, 106265.
- Floyd, S., Jouravlev, O., **Poliak, M.**, Mineroff, Z., Gibson, E., & Fedorenko, E. (2025). Three distinct components of pragmatic language use: Social conventions, intonation, and world knowledge-based causal reasoning. *Proceedings of the National Academy of Sciences*, 122(50), e2424400122.
- Clark, T. H., **Poliak, M.**, Regev, T., Haskins, A. J., Robertson, C., & Gibson, E. (2025). The relationship between surprisal and prosodic prominence in conversation reflects intelligibility-oriented pressures. *Cognitive Science*, 49(10), e70134.
- Chen, A. M.*, Hofer, M.*, **Poliak, M.**, Levy, R., & Zaslavsky, N. (2025). Discrete and systematic communication in a continuous signal-meaning space. *Journal of Language Evolution*, 10(1), 1zaf003.
- Poliak, M.**, Ryskin, R., Braginsky, M., & Gibson, E. (2024). It is not what you say but how you say it: Evidence from Russian shows robust effects of the structural prior on noisy channel inferences. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 50(4), 637–649.

Edited Volumes

- Gibson, E., & **Poliak, M.** (Eds.). (2024). *From fieldwork to linguistic theory: A tribute to Dan Everett* (Empirically Oriented Theoretical Morphology and Syntax 15). Language Science Press.

Manuscripts Under Review and in Preparation

- Poliak, M.**, & Gibson, E. (under review). Bridge effects are not bridge verbs and bridge verbs are just frequent verbs: A response to Huang et al. (2025). *Language*. Preprint, *Zenodo*.
- Fang, C. X., Khosla, M., **Poliak, M.**, & Kanwisher, N. G. (under review). Apparent food selectivity reflects multiple non-food image properties. Preprint, *bioRxiv*.
- de Ávila Othero, G., **Poliak, M.**, Abeillé, A., Hemforth, B., & Gibson, E. (under review). The discourse basis for long-distance dependencies in Brazilian and European Portuguese. *Cognition*. Preprint, *SSRN*.
- Ryskin, R.*, **Poliak, M.***, Qian, P., Clark, T. H., Chen, S., Gibson, E.†, & Levy, R.† (in preparation). An integrated account of language comprehension and processing as noisy-channel inference.

Conference Presentations

- Poliak, M.**, Ricciardi, G., & Gibson, E. (2026). Information structure drives construction selection: A quantitative investigation. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 48.
- Poliak, M.***, An, A.*, Levy, R., & Gibson, E. (2025). Rational inference underlies judgments of grammatical well-formedness. Poster presented at the Conference on Rational Approaches in Language Science (RAILS).
- Ricciardi, G., **Poliak, M.**, & Gibson, E. (2025). The effect of discourse accessibility on syntactic alternations in English. Paper presented at the 58th Annual Meeting of the Societas Linguistica Europaea (SLE), Bordeaux, France.
- Simkova, K. M., Haskins, A. J., Zivsak, B. C., **Poliak, M.**, Clark, T. H., Regev, T. I., Gibson, E., & Robertson, C. E. (2025). Semantic drivers of gaze in individuals with and without autism during dyadic conversation. Presented at the 9th Annual Conference on Cognitive Computational Neuroscience (CCN).
- Poliak, M.**, Kimura, H., & Gibson, E. (2024). Mis-heard lyrics: An ecologically-valid test of noisy channel processing. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 46.
- Poliak, M.**, Malik-Moraleda, S., & Gibson, E. (2024). Sentence processing relies on expectations regarding both meaning and structure. Poster presented at the LSA Annual Convention.
- Poliak, M.**, Fang, X., Ali, M., Bergen, L., & Gibson, E. (2023). Corrective prosody is semantic, not information theoretic: An online speech production study. Poster presented at the 36th Annual Conference on Human Sentence Processing (HSP).
- Chen, A.*, Hofer, M.*, **Poliak, M.**, Levy, R., & Zaslavsky, N. (2022). The emergence of discrete and systematic communication in a continuous signal-meaning space. Poster presented at the 44th Annual Meeting of the 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 presented at the 35th Annual Conference on Human Sentence Processing (HSP).
- Poliak, M.**, Yacovone, A., & Snedeker, J. (2022). Between you and me: Use ERP decoding when between-participants variation is high. Poster presented at the 35th Annual Conference on Human Sentence Processing (HSP).

Poliak, M., Morehouse, K., & Banaji, M. (2021). Gender and judgments of fame: Responses to “noise” are sensitive to local, not global, “signal”. Poster presented at the APS Annual Convention.

Yacovone, A., **Poliak, M.**, Koya, H., & Snedeker, J. (2021). ERP decoding shows bilinguals represent the language of a code-switch after lexical processing. Poster presented at the 34th Annual CUNY Conference on Human Sentence Processing.

* Co-first authors; † Co-senior authors

Invited Talks and Panels

Harvard University , Language and Cognition	2026
<i>Word informativity drives acoustic enhancement</i>	
University of California, Berkeley , Ideas on Consciousness	2024
Discussant, student-led panel	
Harvard University , Language and Cognition	2022
<i>Cross-linguistic noisy channel processing: Investigations in the structural prior</i>	

Fellowships & Funding

STIRR Graduate Research Assistantship , MIT	2026–2027
Nominated award supporting a 50% research appointment for the full academic year to lead the project <i>From questionnaire to results section: Automated, design-aware reporting in Surveyor</i> . Funded by the NINDS Sustainable Transformation of Institutional Research Rigor (STIRR) program, grant RC2NS138558.	

Software

Surveyor (mit-surveyor.com), Developer and maintainer	2023–present
Within-participant survey platform that has hosted over 330 experiments.	

Awards & Honors

Walle Nauta Award	2025, 2026
<i>Continued dedication to teaching</i>	MIT
Angus MacDonald Award	2024
<i>Excellence in undergraduate teaching by a graduate student</i>	MIT
Phi Beta Kappa, Alpha Iota Chapter (Junior 24)	2022
	Harvard University
Derek Bok Center Certificate of Distinction in Teaching	2019 – 2020
	Harvard University
Detur Book Prize	2019
<i>Academic achievement</i>	Harvard University

Teaching Experience

9.59 Lab in Psycholinguistics , Teaching Assistant, MIT	2023–2026
Instructor: Ted Gibson	
Harvard University , Teaching Fellow	2019–2021
Introduction to Computer Science (CS50); Web Programming with Python and JavaScript; Introduction to Artificial Intelligence with Python; Computer Science for Managers.	

Harvard College Peer Advising Fellow

2019–2021

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

Mentoring

Undergraduate Research Supervisor, MIT, Wellesley, and Harvard 2023–present
Supervised 31 undergraduate researchers through the Undergraduate Research Opportunities Program (UROP), MSRP-BIO, and directly funded appointments.
Multi-semester mentees: Ayla Sumer (2026), Aimee Wang (2024–2026), Hannah Kimura (2023).

Service & Volunteering

Ad Hoc Reviewer 2022–present
Journals: Cognition; Cognitive Science; Communications Biology; Journal of Cognitive Psychology; Journal of Experimental Psychology: General; Language and Cognition; Language and Linguistics Compass; Open Mind; Physical Review E; Proceedings of the National Academy of Sciences; Scientific Reports.
Conferences: Annual Meeting of the Cognitive Science Society (CogSci).
BCS Application Assistance Program (AAP) 2022–present
Advised students on graduate school applications.
Statistics Practica and Consulting, MIT BCS 2022–present
Taught practica on linear, mixed-effects, and Bayesian models in BCS and EvLab; regular statistics consulting across labs.
The Welcome Project 2023–2024
English teacher for speakers of other languages.
Diversity and Inclusion Badge Program
Completed a series of online DEI courses.

Skills

Human Languages: Russian (native), Hebrew (native), English (fluent), Spanish (proficient), Arabic (MSA; intermediate), American Sign Language (beginner).
Bayesian hierarchical and ordinal regression (brms, Stan), custom posterior-based analyses, model comparison with Bayes factors and LOO; mixed-effects models; psychometric and latent-variable models (IRT, EFA, CFA); dimensionality reduction (PCA, MDS)
Computer Languages: R, Python, MATLAB, JavaScript, HTML, CSS, PHP, SQL, C.
Software & Tools: Praat, Montreal Forced Aligner, Psychtoolbox, GLMsingle, PyTorch, EEGLAB, SLURM (HPC), Git, Qualtrics, AWS (EC2).