



February 2025

EVELINA (EV) FEDORENKO

evelina9@mit.edu



evlab.mit.edu



43 Vassar St., 46-4127
Cambridge, MA 02478



@ev_fedorenko



@evfedorenko.bsky.social



Brief bio:

Fedorenko is a cognitive neuroscientist who studies the human language system and its relationship with other systems in the brain. She received her Bachelor's degree from Harvard University in 2002, and her Ph.D. from MIT in 2007. She was then awarded a K99R00 Pathway to Independence Career Development Award from NIH. In 2014, she joined the faculty at MGH/HMS, and in 2019 she returned to MIT where she is currently an Associate Professor in the Department of Brain and Cognitive Sciences and a member of the McGovern Institute for Brain Research. Fedorenko uses fMRI, intracranial recordings and stimulation, EEG, MEG, and computational modeling, to study language and cognition in adults and children, including individuals with developmental and acquired brain disorders, and individuals with structurally atypical brains but typical-like cognition.

POSITIONS:

CURRENT:

Department of Brain and Cognitive Sciences, MIT (Cambridge, MA)

07/24 – present *Associate Professor with tenure*
01/20 – 06/24 *Associate Professor*
07/19 – 12/19 *Assistant Professor*

McGovern Institute for Brain Research, MIT (Cambridge, MA)

07/20 – present *Member*
07/19 – 06/20 *Associate Member*

PAST:

MGH / HMS / Athinoula A. Martinos Center for Biomedical Imaging (Charlestown, MA)

01/14 – 01/21 *Research Affiliate, MGH*
01/14 – 06/19 *Assistant Professor, HMS*

Department of Brain and Cognitive Sciences / McGovern Institute for Brain Research, MIT (Cambridge, MA)

07/11 – 12/13 *Research Scientist*

EDUCATION AND TRAINING:

09/07 – 06/11: Postdoctoral Researcher // **MIT** (Cambridge, MA)
09/02 – 08/07: Ph.D. Cognitive Science // **MIT** (Cambridge, MA)
09/98 – 06/02: A.B. (Magna Cum Laude) Psychology/Linguistics // **Harvard University** (Cambridge, MA)

**GRANT FUNDING:****CURRENT:****Extramural:*****Artificial neural network language models as in silico model organisms for the study of language in the human brain***

Funding agency: NIH, Common Fund (type: Pioneer Award)

Award period: Pending // Role: PI***Characterizing and understanding the reasoning capacities of LLMs***

Funding agency: DARPA

Award period: Pending // Role: PI (Co-Is: Jacob Andreas and Antonio Torralba, MIT)***Functional reorganization and recovery of the language and domain-general multiple demand systems in aphasia***

Funding agency: NIH, NIDCD (type: R01)

Award period: Pending // Role: MPI (2nd PI: Swathi Kiran, BU)***fMRI investigations of the language network in awake toddlers and young children***

Funding agency: NIH, NICHD (type: R01)

Award period: Pending // Role: PI (Co-I: Rebecca Saxe, MIT)***Computational neuroscience of language processing in the human brain***

Funding agency: NIH, NINDS (type: U01; NS121471)

Award period: April 2021 – March 2026 // Role: MPI (2nd PI: Mark Richardson, MGH)

MIT-internal:***At the edge of language and reasoning: Discourse structure processing in humans and LLMs***

MIT School of Science, the James W. (1963) And Patricia T. Poitras Fund

Award period: January 2025 – December 2027 // Role: PI

The Language Mission

MIT Quest for Intelligence

Award period: September 2023 – August 2025 // Role: PI (other PI: Jacob Andreas)

Representations of Prosody in Minds, Brains, and Machines

MIT FY22 Research Support Committee

Award period: July 2022 – June 2025 // Role: PI

Cognitive, neural, and computational foundations of conversation (a multi-PI project)

Funding agency: The Simons Foundation via the Simons Center for the Social Brain at MIT

Dates: April 2022 – March 2025 // Role: Lead PI

COMPLETED (select):

- ***Functional reorganization of the language and domain-general multiple demand systems in aphasia***
Funding agency: NIH, NIDCD (type: R01, DC016950)
Award period: April 2019 – March 2024 // Role: MPI (2nd PI: Swathi Kiran, BU)
- ***The neural architecture of pragmatic processing***
Funding agency: NIH, NIDCD (type: R01, DC016607)
Award period: May 2018 – April 2023, NCE until April 2024 // Role: PI



- ***Deriving meaning from natural language in minds and machines***
MIT Quest Pilot Award
Award period: June 2021 – May 2022 // Role: Co-PI (PI: Jacob Andreas)
- ***The neural architecture of pragmatic processing – Administrative Supplement to Support Enhancement of Software Tools for Open Science***
Funding agency: NIH, NIDCD (type: R01-Supplement, DC016607)
Award period: September 2021 – April 2022 // Role: PI
- ***Language in the Mosaic of Social Cognition***
Paul and Lilah Newton Brain Science Award
Award period: September 2020 – August 2021 // Role: PI
- ***The neural architecture of pragmatic processing – Research Supplement to Promote Diversity in Health-Related Research***
Funding agency: NIH, NIDCD (type: R01-Supplement, DC016607)
Award period: November 2018 – April 2020 // Role: PI
- ***EAGER: The cognitive and neural mechanisms of computer programming in young children: storytelling or solving puzzles?***
Funding agency: NSF (type: EAGER, 1744809)
Award period: August 2017 – July 2019 // Role: Co-PI (PI: Marina Bers, Tufts University)
- ***The nature of the pragmatic impairment in autism spectrum disorders***
Funding agency: The Simons Foundation via the Simons Center for the Social Brain at MIT
Dates: April 2015 – March 2018 // Role: Lead PI
- ***fMRI investigations of the functional architecture of the language system***
Funding agency: NIH, NICHD (type: Pathway to Independence K99R00 award)
Award period: K99: July 2009 – June 2011; R00: February 2014 – September 2017 // Role: PI
- ***A Modern Approach to Compositional Knowledge Employment and Representation, Enhanced by Learning***
Funding agency: IARPA
Award period: September 2013 – April 2017 // Role: Co-PI (PI: Francisco Pereira)
- ***Neural correlates of mental time travel: Evaluating the distinct modalities of prospection hypothesis***
Funding agency: The John Templeton Foundation
Award period: October 2014 – August 2016 // Role: PI

SELECT AWARDS AND FELLOWSHIPS:

- The Troland Research Award from the NAS (2025)
- BCS Award for Excellence in Undergraduate Teaching (2023)
- International Chair LabEx Université Paris Cité (Fall 2022)
- BCS Award to an Outstanding Postdoctoral Mentor (2022)
- BCS Award for Excellence in Undergraduate Advising (2021)
- Paul and Lilah Newton Brain Science Award (2020-2021)
- Frederick A. (1971) and Carole J. Middleton Career Development Chair (2020-2023)
- Mercator Fellow at University of Potsdam (2018-2020)
- U.S. Kavli Fellow (2014, 2015)
- *Pathway to Independence* Career Development Award from NIH (2009-2011; 2014-2017)

**JOURNAL PUBLICATIONS (in reverse chronological order):****Summary:**

Google Scholar statistics as of February 11, 2025: total: 17,582; h-index: 67; i10-index: 136

Profile link: <https://scholar.google.com/citations?user=1CgET20AAAAJ&hl=en>

My main line of work – investigations of the cognitive, neural, and genetic architecture of language and the relationship between language and other cognitive systems:

(key review/position papers are marked with !!'s)

Published / in press papers (see below for a list of preprints):

107. Tuckute, G.*, Mahowald, K.*, Isola, P., Oliva, A., Gibson, E. & **Fedorenko, E.** (in press). Intrinsically memorable words have unique associations with their meanings. *JEP: General*.
[DOI: TBD](#)
106. Malik-Moraleda, S., Taliaferro, M., Shannon, S., Jhingan, N., Swords, S., Peterson, D. J., Frommer, P., Okrand, M., Sams, J., Cardwell, R., Freeman, C. & **Fedorenko, E.** (in press). Constructed languages are processed by the same brain mechanisms as natural languages. *PNAS*.
[DOI: TBD](#)
105. Tuckute, G. & **Fedorenko, E.** (2025). An abstract linguistic space for transmitting information from one mind to another. *Neuron*, 112(18), 2996-2998.
[DOI: 10.1016/j.neuron.2024.09.005](#); [PMID: 39326388](#)
104. Tuckute, G., Finzi, D., Margalit, E., Yates, J., Zylberberg, J., Fyshe, A., Chung, S., Fedorenko, E., Kriegeskorte, N., Spector, K.G. and Kar, K. (2025). How to optimize neuroscience data utilization and experiment design for advancing brain models of visual and linguistic cognition? *Neurons, Behavior, Data analysis, and Theory*.
[DOI: 10.51628/001c.127807](#)
103. Li, J., Tuckute, G., Fedorenko, E., Edlow, B. L., Dalca, A. V. & Fischl, B. (2024). JOSA: Joint surface-based registration and atlas construction of brain geometry and function. *Medical Image Analysis*, 103292.
[DOI: 10.1016/j.media.2024.103292](#); [PMID: 39173411](#)
102. Reilly, J. et al. (2024). What we mean when we say semantic: Toward a multidisciplinary semantic glossary. *Psychonomic Bulletin & Review*.
[DOI: 10.3758/s13423-024-02556-7](#); [PMID: 39231896](#)
101. Jamali, M., Grannan, B., Cai, J., Khanna, A. R., Muñoz, W., Caprara, I., Paulk, A. C., Cash, S. S., Fedorenko, E. & Williams, Z. M. (2024). Semantic encoding during language comprehension at single-cell resolution. *Nature*, 631(8021), 610-616.
[DOI: 10.1038/s41586-024-07643-2](#); [PMID: 38961302](#); [PMCID: PMC11254762](#)
- !! 100. Tuckute, G., Kanwisher, N. & **Fedorenko, E.** (2024). Language in minds, brains, and machines. *Annual Reviews of Neuroscience*, 47(1), 277-301.
[DOI: 10.1146/annurev-neuro-120623-101142](#); [PMID: 38669478](#)
- !! 99. **Fedorenko, E.**, Piantadosi, S. & Gibson, E. (2024). Language is primarily a tool for communication rather than thought. *Nature*, 630(8017), 575-586.
[DOI: 10.1038/s41586-024-07522-w](#); [PMID: 38898296](#)
98. Regev, T. I.*, Lipkin, B.*, Boebinger, D. L., Paunov, A. M., Kean, H., Norman-Haignere, S. V., & **Fedorenko, E.** (2024). Preserved functional organization of auditory cortex in two individuals missing one temporal lobe from infancy. *iScience*, 27(9), 110548.
[DOI: 10.1016/j.isci.2024.110548](#); [PMID: 39262782](#); [PMCID: PMC11387894](#)
97. Regev, T. I.*, Casto, C.*, Hosseini, E., Adamek, M., Ritaccio, A. L., Willie, J. T., Brunner, P., & **Fedorenko, E.** (2024). Neural populations in the language network differ in the size of their temporal

- receptive windows. *Nature Human Behavior*, 8(10), 1924-1942.
 DOI: [10.1038/s41562-024-01944-2](https://doi.org/10.1038/s41562-024-01944-2); PMID: [39187713](https://pubmed.ncbi.nlm.nih.gov/39187713/)
96. Shain, C.* , Kean, H.* , Lipkin, B., Affourtit, J., Siegelman, M., Mollica, F.^ & **Fedorenko, E.**^ (2024). Distributed sensitivity to syntax and semantics throughout the language network. *Journal of Cognitive Neuroscience*, 36(7), 1427-1471.
 DOI: [10.1162/jocn_a_02164](https://doi.org/10.1162/jocn_a_02164); PMID: [38683732](https://pubmed.ncbi.nlm.nih.gov/38683732/)
95. Regev, T. I., Kim, H. S., Affourtit, J., Chen, X., Schipper, A. E., Bergen, L., Mahowald, K., & **Fedorenko, E.** (2024). High-level language brain regions process sublexical regularities. *Cerebral Cortex*, 34(3), bhae077.
 DOI: [10.1093/cercor/bhae077](https://doi.org/10.1093/cercor/bhae077); PMID: [38494886](https://pubmed.ncbi.nlm.nih.gov/38494886/)
- !! 94. Mahowald, K.* , Ivanova, A.* , Blank, I. Kanwisher, N., Tenenbaum, J. & **Fedorenko E.** (2024). Dissociating language and thought in large language models. *Trends in Cognitive Sciences*, 28(6), 517-540.
 DOI: [10.1016/j.tics.2024.01.011](https://doi.org/10.1016/j.tics.2024.01.011); PMID: [38508911](https://pubmed.ncbi.nlm.nih.gov/38508911/)
93. Malik-Moraleda, S.* , Jouravlev. O.* , Mineroff, Z., Cucu, T., Taliaferro, M., Mahowald, K., Blank, I. & **Fedorenko. E.** (2024). Functional characterization of the language network of polyglots and hyperpolyglots with precision fMRI. *Cerebral Cortex*, 34(3), bhae049.
 DOI: [10.1093/cercor/bhae049](https://doi.org/10.1093/cercor/bhae049); PMID: [36711949](https://pubmed.ncbi.nlm.nih.gov/36711949/); PMCID: [PMC9882290](https://pubmed.ncbi.nlm.nih.gov/PMC9882290/)
- !! 92. **Fedorenko E.**, Ivanova, A. A. & Regev, T. I. (2024). The language network as a natural kind in the broader landscape of the human brain. *Nature Reviews Neuroscience*, 25, 289-312.
 DOI: [10.1038/s41583-024-00802-4](https://doi.org/10.1038/s41583-024-00802-4); PMID: [38609551](https://pubmed.ncbi.nlm.nih.gov/38609551/)
91. Sueoka, Y.* , Paunov, A.* , Blank, I., Tanner, A., Ivanova, A.^, **Fedorenko, E.**^ (2024). The language network reliably 'tracks' naturalistic meaningful non-verbal stimuli. *Neurobiology of Language*, 5(2), 385-408.
 DOI: [10.1162/nol_a_00135](https://doi.org/10.1162/nol_a_00135); PMID: [38911462](https://pubmed.ncbi.nlm.nih.gov/38911462/); PMCID: [PMC11192443](https://pubmed.ncbi.nlm.nih.gov/PMC11192443/)
90. Hosseini, E., Schrimpf, M., Zhang, Y., Bowman, S., Zaslavsky, N., & **Fedorenko, E.** (2024). Artificial neural network language models predict human brain responses to language even after a developmentally realistic amount of training. *Neurobiology of Language*, 5(1), 43-63.
 DOI: [10.1162/nol_a_00137](https://doi.org/10.1162/nol_a_00137); PMID: [38645622](https://pubmed.ncbi.nlm.nih.gov/38645622/); PMCID: [PMC11025646](https://pubmed.ncbi.nlm.nih.gov/PMC11025646/)
89. Tuckute, G., Sathe, A., Srikant, S., Taliaferro, M., Wang, M., Schrimpf, M., Kay, K., & **Fedorenko, E.** (2024). Driving and suppressing the human language network using large language models. *Nature Human Behavior*, 8, 544-561.
 DOI: [10.1038/s41562-023-01783-7](https://doi.org/10.1038/s41562-023-01783-7); PMID: [38172630](https://pubmed.ncbi.nlm.nih.gov/38172630/)
88. Kauf, C.* , Ivanova, A. A.* , Rambelli, J., Chersoni, E., She, J. S., Chowdhury, Z., Fedorenko, E. & Lenci, A. (2023). Event knowledge in large language models: The gap between the impossible and the unlikely. *Cognitive Science*, 47(11), e13386.
 DOI: [10.1111/cogs.13386](https://doi.org/10.1111/cogs.13386); PMID: [38009752](https://pubmed.ncbi.nlm.nih.gov/38009752/)
87. Benn, Y.* , Ivanova, A. A.* , Clark, O., Mineroff, Z., Seikus, C., Silva, J. S., Varley, R.^ & **Fedorenko, E.**^ (2023). The language network is not engaged in object categorization. *Cerebral Cortex*, 33(19), 10380–10400.
 DOI: [10.1093/cercor/bhad289](https://doi.org/10.1093/cercor/bhad289); PMID: [37557910](https://pubmed.ncbi.nlm.nih.gov/37557910/); PMCID: [PMC10545444](https://pubmed.ncbi.nlm.nih.gov/PMC10545444/)
86. Mahowald, K.* , Diachek, E.* , Gibson, E., **Fedorenko, E.**^ , & Futrell, R.^ (2023). Grammatical cues to subjecthood are redundant in a majority of simple clauses across languages. *Cognition*, 241, 105543.
 DOI: [10.1016/j.cognition.2023.105543](https://doi.org/10.1016/j.cognition.2023.105543); PMID: [37713956](https://pubmed.ncbi.nlm.nih.gov/37713956/)
85. Kauf, C.* , Tuckute, G.* , Levy, R., Andreas, J., & **Fedorenko E.** (2023). Lexical semantic content, not syntactic structure, is the main contributor to ANN-brain similarity of fMRI responses in the language network. *Neurobiology of Language*, 5(1), 7-42.
 DOI: [10.1162/nol_a_00116](https://doi.org/10.1162/nol_a_00116); PMID: [38645614](https://pubmed.ncbi.nlm.nih.gov/38645614/); PMCID: [PMC11025651](https://pubmed.ncbi.nlm.nih.gov/PMC11025651/)
84. Hauptman, M., Blank, I.^, & **Fedorenko, E.**^ (2023). Non-literal language processing is jointly supported by the language and Theory of Mind networks: Evidence from a novel meta-analytic fMRI approach. *Cortex*, 162, 96-114.

- DOI: [10.1016/j.cortex.2023.01.013](https://doi.org/10.1016/j.cortex.2023.01.013); PMID: 37023480; PMCID: PMC10210011
83. Chen, X., Affourtit, J., Ryskin, R., Regev, T. I., Norman-Haignere, S., Jouravlev, O., Malik-Moraleda, S., Kean, H., Varley, R. & **Fedorenko, E.** (2023). The human language system, including its inferior frontal component in “Broca’s area”, does not support music perception. *Cerebral Cortex*, 33(12), 7904-7929. DOI: [10.1093/cercor/bhad087](https://doi.org/10.1093/cercor/bhad087); PMID: 37005063; PMCID: PMC10505454
82. Shain, C.*, Paunov, A.*, Chen, X.*, Lipkin, B., & **Fedorenko, E.** (2023). No evidence of theory of mind reasoning in the human language network. *Cerebral Cortex*, 33(10), 6299-6319. DOI: [10.1093/cercor/bhac505](https://doi.org/10.1093/cercor/bhac505); PMID: 36585774; PMCID: PMC10183748
81. Li, J., Fedorenko, E. & Saygin, Z. (2022). Intact reading ability in spite of a spatially distributed visual word form ‘area’ in an individual born without the left superior temporal lobe. *Cognitive Neuropsychology*, 39(5-8), 249-275. DOI: [10.1080/02643294.2023.2164923](https://doi.org/10.1080/02643294.2023.2164923); PMID: 36653302; PMCID: PMC10213128
80. Kar, K., Kornblith, S., & **Fedorenko, E.** (2022). Interpretability of artificial neural network models in artificial intelligence versus neuroscience. *Nature Machine Intelligence*, 4, 1065-1067. DOI: [10.1038/s42256-022-00592-3](https://doi.org/10.1038/s42256-022-00592-3)
79. Ivanova, A. A., Schrimpf, M., Anzellotti, S., Zaslavsky, N., Fedorenko, E. & Isik, L. (2022). Beyond linear regression: mapping models in cognitive neuroscience should align with research goals. *Neurons, behavior, data analysis and theory*. DOI: [10.51628/001c.37507](https://doi.org/10.51628/001c.37507)
78. **Fedorenko, E.**, Ryskin, R., & Gibson, E. (2022). Agrammatic output in non-fluent, including Broca's, aphasia as a rational behavior. *Aphasiology*, 37(12), 1981-2000. DOI: [10.1080/02687038.2022.2143233](https://doi.org/10.1080/02687038.2022.2143233); PMID: 38213953; PMCID: PMC10782888
77. MacGregor, L., Gilbert, R., Balewski, Z., Mitchell, D., Erzinclioglu, S., Rodd, J., Duncan, J., Fedorenko, E., Davis, M. (2022). Causal contributions of the domain-general (Multiple Demand) and the language-selective brain networks to perceptual and semantic challenges in speech comprehension. *Neurobiology of Language*, 3(4), 665-698. DOI: [10.1162/nol_a_00081](https://doi.org/10.1162/nol_a_00081); PMID: 36742011; PMCID: PMC9893226
76. Hu, J.*, Small, H.*, Kean, H., Takahashi, A., Zekelman, L., Kleinman, D., Ryan, E., Nieto-Castañón, A., Ferreira, V. & **Fedorenko, E.** (2022). Precision fMRI reveals that the language-selective network supports both phrase-structure building and lexical access during language production. *Cerebral Cortex*, 33(8), 4384-4404. DOI: [10.1093/cercor/bhac350](https://doi.org/10.1093/cercor/bhac350); PMID: 36130104; PMCID: PMC10110436
75. Shain, C., Blank, I., Fedorenko, E., Gibson, E. & Schuler, W. (2022). Robust effects of working memory demand during naturalistic language comprehension in language-selective cortex. *Journal of Neuroscience*, 42(39), 7412-7430. DOI: [10.1523/JNEUROSCI.1894-21.2022](https://doi.org/10.1523/JNEUROSCI.1894-21.2022); PMID: 36002263; PMCID: PMC9525168
74. Lipkin, B., Tuckute, G., Affourtit, J., Small, H., Mineroff, Z., Kean, H., Jouravlev, O., Rakocevic, L., Pritchett, B., Siegelman, M., Hoeflin, C., Pongos, A., Blank, I., Kline, M., Ivanova, A., Shannon, S., Sathe, A., Hoffman, M., Nieto-Castañón, A., & **Fedorenko, E.** (2022). LanA (Language Atlas): A probabilistic atlas for the language network based on fMRI data from >800 individuals. *Nature Scientific Data*, 9, 529. DOI: [10.1038/s41597-022-01645-3](https://doi.org/10.1038/s41597-022-01645-3); PMID: 36038572; PMCID: PMC9424256
73. Malik-Moraleda, S.*, Ayyash, D.*, Gallée, J., Affourtit, J., Hoffmann, M., Mineroff, Z., Jouravlev, O. & **Fedorenko, E.** (2022). An investigation across 45 languages and 12 language families reveals a universal language network. *Nature Neuroscience*, 25, 1014-1019. DOI: [10.1038/s41593-022-01114-5](https://doi.org/10.1038/s41593-022-01114-5); PMID: 35856094; PMCID: PMC10414179
72. Paunov, A. M., Blank, I. A., Jouravlev, O., Mineroff, Z., Gallée, J., & **Fedorenko, E.** (2022). Differential tracking of linguistic vs. mental state content in naturalistic stimuli by language and Theory of Mind (ToM) brain networks. *Neurobiology of Language*, 3(3), 413-440. DOI: [10.1162/nol_a_00071](https://doi.org/10.1162/nol_a_00071); PMID: 37216061; PMCID: PMC10158571
71. Jamali, M., Grannan, B. L., Fedorenko, E., Saxe, R., Báez-Mendoza, R., & Williams, Z. M. (2021). Single-



- neuronal predictions of others' beliefs in humans. *Nature*, 591(7851), 610-614.
DOI: [10.1038/s41586-021-03184-0](https://doi.org/10.1038/s41586-021-03184-0); PMID: 33505022; PMCID: PMC7990696
70. Tuckute, G., Paunov, A., Kean, H., Small, H., Mineroff, Z., Blank, I., & **Fedorenko, E.** (2021). Frontal language areas do not emerge in the absence of temporal language areas: A case study of an individual born without a left temporal lobe. *Neuropsychologia*, 108184.
DOI: [10.106/j.neuropsychologia.2022.108184](https://doi.org/10.106/j.neuropsychologia.2022.108184); PMID: 35183561
69. Grand, G.*, Blank, I.*, Pereira, F.^ & **Fedorenko, E.**^ (2022). Semantic projection recovers rich human knowledge of multiple object features from word embeddings. *Nature Human Behavior*, 6, 975-987.
DOI: [10.1038/s41562-022-01316-8](https://doi.org/10.1038/s41562-022-01316-8); PMID: 35422527; PMCID: PMC10349641
68. Malik-Moraleda, S., Cucu, T., Lipkin, B. & **Fedorenko, E.** (2021). The domain-general Multiple Demand network is more active in early balanced bilinguals than monolinguals during executive processing. *Neurobiology of Language*, 2(4), 647-664.
DOI: [10.1162/nol_a_00058](https://doi.org/10.1162/nol_a_00058); PMID: 37214622; PMCID: PMC10158558
67. Schrimpf, M., Blank, I.*, Tuckute, G.*, Kauf, C.*, Hosseini, E., Kanwisher, N., Tenenbaum, J.^ & **Fedorenko, E.**^ (2021). The neural architecture of language: Integrative modeling converges on predictive processing. *PNAS*, 118(45), e2105646118.
DOI: [10.1073/pnas.2105646118](https://doi.org/10.1073/pnas.2105646118); PMID: 34737231; PMCID: PMC8694052
- !! 66. **Fedorenko, E.** & Shain, C. (2021). Similarity of computations across domains does not imply shared implementation: The case of language comprehension. *Current Directions in Psychological Science*, 30(6), 526-534.
DOI: [10.1177/09637214211046955](https://doi.org/10.1177/09637214211046955); PMID: 35295820; PMCID: PMC8923525
65. Ryskin, R., Stearns, L., Bergen, L., Eddy, M., Fedorenko, E. & Gibson, E. (2021). An ERP index of real-time error correction within a noisy-channel framework of human communication. *Neuropsychologia*, 158, 107855.
DOI: [10.1016/j.neuropsychologia.2021.107855](https://doi.org/10.1016/j.neuropsychologia.2021.107855); PMID: 33865848
64. **Fedorenko, E.** (2021). The early origins and the growing popularity of the individual-subject analytic approach in human neuroscience. *Current Opinion in Behavioral Sciences*, 40, 105-112.
DOI: [10.1016/j.cobeha.2021.02.023](https://doi.org/10.1016/j.cobeha.2021.02.023)
63. Wehbe, L., Blank, I. A., Shain, C., Futrell, R., Levy, R., von der Malsburg, T., Smith, N., Gibson, E. & **Fedorenko, E.** (2021). Incremental language comprehension difficulty predicts activity in the language network but not the multiple demand network. *Cerebral Cortex*, 31(9), 4006-4023.
DOI: [10.1093/cercor/bhab065](https://doi.org/10.1093/cercor/bhab065); PMID: 33895807; PMCID: PMC8328211
62. Futrell, R., Gibson, E., Tily, H., Blank, I., Vishnevetsky, A., Piantadosi, S., & **Fedorenko, E.** (2021). The Natural Stories Corpus: A reading-time corpus of English texts containing rare syntactic constructions. *Language Resources and Evaluation*, 55(1), 63-77.
DOI: [10.1007/s10579-020-09503-7](https://doi.org/10.1007/s10579-020-09503-7); PMID: 34720781; PMCID: PMC8549930
61. Gallée, J., Cordella, C., Fedorenko, E., Hochberg, D., Touroutoglou, A., Quimby, A. & Dickerson, B. (2021). Breakdowns in informativeness of naturalistic speech production in primary progressive aphasia. *Brain Sciences*, 11(2), 130.
DOI: [10.3390/brainsci11020130](https://doi.org/10.3390/brainsci11020130); PMID: 33498260; PMCID: PMC7909266
60. Ivanova, A., Mineroff, Z., Zimmerer, V., Kanwisher, N., Varley, R. & **Fedorenko, E.** (2021). The language network is recruited but not required for non-verbal event semantics. *Neurobiology of Language*, 2(2), 176-201.
DOI: doi.org/10.1162/nol_a_00030; PMID: 37216147; PMCID: PMC10158592
59. Ivanova, A., Srikant, S., Sueoka, Y., Kean, H., Dhamala, R., O'Reilly, U. M., Bers M. & **Fedorenko, E.** (2020). Comprehension of computer code relies primarily on domain-general executive brain regions. *eLife*, 9, e58906.
DOI: [10.7554/eLife.58906](https://doi.org/10.7554/eLife.58906); PMID: 33319744; PMCID: PMC7738192
58. Jouravlev, O., Kell, A., Mineroff, Z., Haskins, AJ, Ayyash, D., Kanwisher, N. & **Fedorenko, E.** (2020). Reduced language lateralization is a robust marker of the broader autism phenotype. *Autism Research*,

- 13(10), 1746-1761.
 DOI: [10.1002/aur.2393](https://doi.org/10.1002/aur.2393); PMID: [32935455](https://pubmed.ncbi.nlm.nih.gov/32935455/)
57. Jouravlev, O., Mineroff, Z., Blank, I. & **Fedorenko, E.** (2020). The small and efficient language network of polyglots and hyperpolyglots. *Cerebral Cortex*, 31(1), 62-76.
 DOI: [10.1093/cercor/bhaa205](https://doi.org/10.1093/cercor/bhaa205); PMID: [32820332](https://pubmed.ncbi.nlm.nih.gov/32820332/); PMCID: [PMC7727365](https://pubmed.ncbi.nlm.nih.gov/PMC7727365/)
56. Assem, M., Blank, I., Mineroff, Z., Ademoglu, A. & **Fedorenko, E.** (2020). Activity in the fronto-parietal Multiple-Demand network is robustly associated with individual differences in working memory and fluid intelligence. *Cortex*, 131, 1-16.
 DOI: [10.1016/j.cortex.2020.06.013](https://doi.org/10.1016/j.cortex.2020.06.013); PMID: [32777623](https://pubmed.ncbi.nlm.nih.gov/32777623/); PMCID: [PMC7530021](https://pubmed.ncbi.nlm.nih.gov/PMC7530021/)
55. **Fedorenko, E.**, Blank, I., Siegelman, M. & Mineroff, Z. (2020). Lack of selectivity for syntax relative to word meanings throughout the language network. *Cognition*, 203, 104348.
 DOI: [10.1016/j.cognition.2020.104348](https://doi.org/10.1016/j.cognition.2020.104348); PMID: [32569894](https://pubmed.ncbi.nlm.nih.gov/32569894/); PMCID: [PMC7483589](https://pubmed.ncbi.nlm.nih.gov/PMC7483589/)
54. Blank, I. & **Fedorenko, E.** (2020). No evidence for differences among language regions in their temporal receptive windows. *NeuroImage*, 219, 116925.
 DOI: [10.1016/j.neuroimage.2020.116925](https://doi.org/10.1016/j.neuroimage.2020.116925); PMID: [32407994](https://pubmed.ncbi.nlm.nih.gov/32407994/); PMCID: [PMC9392830](https://pubmed.ncbi.nlm.nih.gov/PMC9392830/)
53. Diachek, E.*, Blank, I.*, Siegelman, M.*, Affourtit J. & **Fedorenko, E.** (2020). The domain-general multiple demand (MD) network does not support core aspects of language comprehension: a large-scale fMRI investigation. *Journal of Neuroscience*, 40(23), 4536-4550.
 DOI: [10.1523/JNEUROSCI.2036-19.2020](https://doi.org/10.1523/JNEUROSCI.2036-19.2020); PMID: [32317387](https://pubmed.ncbi.nlm.nih.gov/32317387/); PMCID: [PMC7275862](https://pubmed.ncbi.nlm.nih.gov/PMC7275862/)
- !! 52. **Fedorenko, E.** & Blank, I. (2020). Broca's area is not a natural kind. *Trends in Cognitive Sciences*, 24(4), 270-284.
 DOI: [10.1016/j.tics.2020.01.001](https://doi.org/10.1016/j.tics.2020.01.001); PMID: [32160565](https://pubmed.ncbi.nlm.nih.gov/32160565/); PMCID: [PMC7211504](https://pubmed.ncbi.nlm.nih.gov/PMC7211504/)
51. Shain, C.*, Blank, I.*, Van Shijndel, M., Schuler, W. & **Fedorenko, E.** (2020). fMRI reveals language-specific predictive coding during naturalistic sentence comprehension. *Neuropsychologia*, 138, 107307.
 DOI: [10.1016/j.neuropsychologia.2019.107307](https://doi.org/10.1016/j.neuropsychologia.2019.107307); PMID: [31874149](https://pubmed.ncbi.nlm.nih.gov/31874149/); PMCID: [PMC7140726](https://pubmed.ncbi.nlm.nih.gov/PMC7140726/)
50. Mollica, F.*, Siegelman, M.*, Diachek, E., Piantadosi, S., Mineroff, Z., Futrell, R., Kean H., Qian, P. & **Fedorenko, E.** (2020). Composition is the core driver of the language-selective network. *Neurobiology of Language*, 1(1), 104-134.
 DOI: [10.1162/nol_a_00005](https://doi.org/10.1162/nol_a_00005); PMID: [36794007](https://pubmed.ncbi.nlm.nih.gov/36794007/); PMCID: [PMC9923699](https://pubmed.ncbi.nlm.nih.gov/PMC9923699/)
49. Kong, X., Tzourio-Mazoyer, M., Joliot, M., Fedorenko, E., Liu, J., Fisher, S.E. & Francks, C. (2020). Gene expression correlates of the cortical network underlying sentence processing. *Neurobiology of Language*, 1(1), 77-103.
 DOI: [10.1162/nol_a_00004](https://doi.org/10.1162/nol_a_00004); PMID: [36794006](https://pubmed.ncbi.nlm.nih.gov/36794006/); PMCID: [PMC9923707](https://pubmed.ncbi.nlm.nih.gov/PMC9923707/)
48. Ryskin, R., Levy, R & **Fedorenko, E.** (2020). Do domain-general executive resources play a role in linguistic prediction? Re-evaluation of the evidence and a path forward. *Neuropsychologia*, 136, 107258.
 DOI: [10.1016/j.neuropsychologia.2019.107258](https://doi.org/10.1016/j.neuropsychologia.2019.107258); PMID: [31730774](https://pubmed.ncbi.nlm.nih.gov/31730774/)
47. Uddén, J., Hultén, A., Bendtz, K., Mineroff, Z., Kucera, K.S., Vino, A., Fedorenko, E., Hagoort, P. & Fisher, S. (2019). Towards robust functional neuroimaging genetics of cognition. *Journal of Neuroscience*, 39(44), 8778-8787.
 DOI: [10.1523/JNEUROSCI.0888-19.2019](https://doi.org/10.1523/JNEUROSCI.0888-19.2019); PMID: [31570534](https://pubmed.ncbi.nlm.nih.gov/31570534/); PMCID: [PMC6820208](https://pubmed.ncbi.nlm.nih.gov/PMC6820208/)
46. Jouravlev, O., Zheng, D., Balewski, Z., Pongos, A., Levan, Z., Goldin-Meadow, S. & **Fedorenko, E.** (2019). Speech-accompanying gestures are not processed by the language processing mechanisms. *Neuropsychologia*, 132, 107132.
 DOI: [10.1016/j.neuropsychologia.2019.107132](https://doi.org/10.1016/j.neuropsychologia.2019.107132); PMID: [31276684](https://pubmed.ncbi.nlm.nih.gov/31276684/); PMCID: [PMC6708375](https://pubmed.ncbi.nlm.nih.gov/PMC6708375/)
45. Siegelman, M., Blank, I., Mineroff, Z. & **Fedorenko, E.** (2019). An attempt to conceptually replicate the dissociation between syntax and semantics during sentence comprehension. *Neuroscience*, 413, 219-229.
 DOI: [10.1016/j.neuroscience.2019.06.003](https://doi.org/10.1016/j.neuroscience.2019.06.003); PMID: [31200104](https://pubmed.ncbi.nlm.nih.gov/31200104/); PMCID: [PMC6661197](https://pubmed.ncbi.nlm.nih.gov/PMC6661197/)
44. **Fedorenko, E.**, Ivanova, A., Dhamala, R. & Bers, M. (2019). The language of programming: A cognitive perspective. *Trends in Cognitive Sciences*, 23(7), 525-528.
 DOI: [10.1016/j.tics.2019.04.010](https://doi.org/10.1016/j.tics.2019.04.010); PMID: [31153775](https://pubmed.ncbi.nlm.nih.gov/31153775/)

43. Paunov, A., Blank, I. & **Fedorenko, E.** (2019). Functionally distinct language and Theory and Mind networks are synchronized at rest and during language comprehension. *Journal of Neurophysiology*, 121(4), 1244-1265.
DOI: [10.1152/jn.00619.2018](https://doi.org/10.1152/jn.00619.2018); PMID: 30601693; PMCID: PMC6485726
42. Mineroff, Z.*, Blank, I.*, Mahowald, K. & **Fedorenko, E.** (2018). A robust dissociation among the language, multiple demand, and default mode networks: evidence from inter-region correlations in effect size. *Neuropsychologia*, 119, 501-511.
DOI: [10.1016/j.neuropsychologia.2018.09.011](https://doi.org/10.1016/j.neuropsychologia.2018.09.011); PMID: 30243926; PMCID: PMC6191329
41. **Fedorenko, E.**, Williams, Z.M. & Ferreira, V.S. (2018). Remaining puzzles about morpheme production in the posterior temporal lobe. *Neuroscience*, 392, 160-163.
DOI: [10.1016/j.neuroscience.2018.09.032](https://doi.org/10.1016/j.neuroscience.2018.09.032); PMID: 30278250
40. Jacoby, N. & **Fedorenko, E.** (2018; came out in 2020). Discourse-level comprehension engages medial frontal Theory of Mind brain regions even for expository texts. *Language, Cognition and Neuroscience*, 35(6), 780-796.
DOI: [10.1080/23273798.2018.1525494](https://doi.org/10.1080/23273798.2018.1525494); PMID: 32984430; PMCID: PMC7518647
39. Pritchett, B., Hoeflin, C., Koldewyn, K., Dechter, E. & **Fedorenko, E.** (2018). High-level language processing regions are not engaged in action observation or imitation. *Journal of Neurophysiology*, 120(5), 2555-2570.
DOI: [10.1152/jn.00222.2018](https://doi.org/10.1152/jn.00222.2018); PMID: 30156457; PMCID: PMC6295536
38. Jouravlev, O., Schwarz, R., Ayaash, D., Mineroff, Z., Gibson, E. & **Fedorenko, E.** (2019). Tracking co-listeners' knowledge states during language comprehension. *Psychological Science*, 30(1), 3-19.
DOI: [10.1177/0956797618807674](https://doi.org/10.1177/0956797618807674); PMID: 30444681; PMCID: PMC6344950
37. Mei, C., Fedorenko, E., Amor, D., Boys, A., Hoeflin, C., Carew, P., Burgess, T., Fisher, S. & Morgan, A. (2018). Deep phenotyping of speech and language skills in 16p11.2 deletion syndrome. *EJHG*, 26(5), 676-686.
DOI: [10.1038/s41431-018-0102-x](https://doi.org/10.1038/s41431-018-0102-x); PMID: 29445122; PMCID: PMC5945616
36. Lee, D.K.*, **Fedorenko, E.***, Simon, M.V., Curry, W.T., Nahed, B.V., Cahill, D.P. & Williams, Z.M. (2018). Neural encoding and production of functional morphemes in the posterior temporal lobe. *Nature Communications*, 9(1), 1877.
DOI: [10.1038/s41467-018-04235-3](https://doi.org/10.1038/s41467-018-04235-3); PMID: 29760465 PMCID: PMC5951905
35. Pereira, F., Lou, B., Pritchett, B., Ritter, S., Gershman, S.J., Kanwisher, N., Botvinick, M. & **Fedorenko, E.** (2018). Toward a universal decoder of linguistic meaning from brain activation. *Nature Communications*, 9, 963.
DOI: [10.1038/s41467-018-03068-4](https://doi.org/10.1038/s41467-018-03068-4); PMID: 29511192; PMCID: PMC5840373
34. Woolgar, A., Duncan, J., Manes, F. & **Fedorenko, E.** (2018). The multiple-demand, but not language, system supports fluid intelligence. *Nature Human Behavior*, 2, 200-204.
DOI: [10.1038/s41562-017-0282-3](https://doi.org/10.1038/s41562-017-0282-3); PMID: 31620646; PMCID: PMC6795543
33. Blank, I., Kiran, S. & **Fedorenko, E.** (2017). Can neuroimaging help aphasia researchers? Addressing generalizability, idiosyncrasy, and interpretability. *Cognitive Neuropsychology*, 34(6), 377-393.
DOI: [10.1080/02643294.2017.1402756](https://doi.org/10.1080/02643294.2017.1402756); PMID: 29188746; PMCID: PMC6157596
32. Blank, I. & **Fedorenko, E.** (2017). Domain-general brain regions do not track linguistic input as closely as language-selective regions. *Journal of Neuroscience*, 37(41), 9999-10011.
DOI: [10.1523/JNEUROSCI.3642-16.2017](https://doi.org/10.1523/JNEUROSCI.3642-16.2017); PMID: 28871034; PMCID: PMC5637122
31. Basilakos, A., Smith, K., Fillmore, P., Fridriksson, J. & **Fedorenko, E.** (2017). Functional characterization of the human speech articulation network. *Cerebral Cortex*, 28(5), 1816-1830.
DOI: [10.1093/cercor/bhx100](https://doi.org/10.1093/cercor/bhx100); PMID: 28453613; PMCID: PMC5907347
30. Gibson, E., Tan, C., Futrell, R., Mahowald, K., Konieczny, L., Hemforth, B. & **Fedorenko, E.** (2017). Don't underestimate the benefits of being misunderstood. *Psychological Science*, 28(6), 703-712.
DOI: [10.1177/0956797617690277](https://doi.org/10.1177/0956797617690277); PMID: 28394708

29. Amit, E., Hoeflin, C., Hamzah, N. & **Fedorenko, E.** (2017). An asymmetrical relationship between verbal and visual thinking: converging evidence from behavior and fMRI. *NeuroImage*, 152, 619-627.
DOI: [10.1016/j.neuroimage.2017.03.029](https://doi.org/10.1016/j.neuroimage.2017.03.029); PMID: 28323162; PMCID: PMC5448978
28. Scott, T., Gallée, J. & **Fedorenko, E.** (2017). A new fun and robust version of an fMRI localizer for the fronto-temporal language system. *Cognitive Neuroscience*, 8(3), 167-176.
DOI: [10.1080/17588928.2016.1201466](https://doi.org/10.1080/17588928.2016.1201466); PMID: 27386919
27. Piantadosi, S. & **Fedorenko, E.** (2017). Infinitely productive language can arise from chance under communicative pressure. *Journal of Language Evolution*, 2(2), 141-147.
DOI: [10.1093/jole/lzw013](https://doi.org/10.1093/jole/lzw013)
26. **Fedorenko, E.**, Scott, T., Brunner, P., Coon, W.G., Pritchett, B., Schalk, G. & Kanwisher, N. (2016). Neural correlate of the construction of sentence meaning. *PNAS*, 113(41), E6256-E6262.
DOI: [10.1073/pnas.1612132113](https://doi.org/10.1073/pnas.1612132113); PMID: 27671642; PMCID: PMC5068329
25. Chai, L., Mattar, M., Blank, I., Fedorenko, E. & Bassett, D. (2016). Functional Network Dynamics of the Language System. *Cerebral Cortex*, 26(11), 4148-4159.
DOI: [10.1093/cercor/bhw238](https://doi.org/10.1093/cercor/bhw238); PMID: 27550868; PMCID: PMC5066829
24. Jouravlev, O., Stearns, L., Bergen, L., Eddy, M., Gibson, E. & **Fedorenko, E.** (2016). Processing Temporal Presuppositions: an ERP study. *Language, Cognition & Neuroscience*, 31(10), 1245-1256.
DOI: [10.1080/23273798.2016.1209531](https://doi.org/10.1080/23273798.2016.1209531)
23. Mahowald, K. & **Fedorenko, E.** (2016). Reliable individual-level neural markers of language activity: A necessary precursor for relating neural variability to genetic and behavioral variability. *NeuroImage*, 139, 74-93.
DOI: [10.1016/j.neuroimage.2016.05.073](https://doi.org/10.1016/j.neuroimage.2016.05.073); PMID: 27261158
- !! 22. **Fedorenko, E.** & Varley, R. (2016). Language and thought are not the same thing: Evidence from neuroimaging and neurological patients. *Annals of the NY Academy of Sciences*, 1369(1), 132-153.
DOI: [10.1111/nyas.13046](https://doi.org/10.1111/nyas.13046); PMID: 27096882; PMCID: PMC4874898
21. Blank, I., Balewski, Z., Mahowald, K. & **Fedorenko, E.** (2016). Syntactic processing is distributed across the language system. *NeuroImage*, 127, 307-323.
DOI: [10.1016/j.neuroimage.2015.11.069](https://doi.org/10.1016/j.neuroimage.2015.11.069); PMID: 26666896; PMCID: PMC4755877
20. Gibson, E., Sandberg, C., Bergen, L., Fedorenko, E. & Kiran, S. (2016). A rational inference approach to aphasic language comprehension. *Aphasiology*, 30(11), 1341-1360.
DOI: [10.1080/02687038.2015.1111994](https://doi.org/10.1080/02687038.2015.1111994); PMID: 28391038; PMCID: PMC5485413
19. **Fedorenko, E.***, Morgan, A.*, Murray, E., Cardinaux, A., Mei, C., Tager-Flusberg, H., Fisher, S. & Kanwisher, N. (2016). A highly penetrant form of childhood apraxia of speech due to deletion of 16p11.2. *European Journal of Human Genetics*, 24(2), 302-306.
DOI: [10.1038/ejhg.2015.149](https://doi.org/10.1038/ejhg.2015.149); PMID: 26763793; PMCID: PMC4717201
18. **Fedorenko, E.**, Fillmore, P., Smith, K., Bonilha, L. & Fridriksson, J. (2015). The superior precentral gyrus of the insula does not appear to be functionally specialized for articulation. *Journal of Neurophysiology*, 113(7), 2376-2382.
DOI: [10.1152/jn.00214.2014](https://doi.org/10.1152/jn.00214.2014); PMID: 25632073; PMCID: PMC4416598
17. **Fedorenko, E.**, Hsieh, P.-J. & Balewski, Z. (2015). A possible functional localizer for identifying brain regions sensitive to sentence-level prosody. *Language, Cognition and Neuroscience (formerly Language and Cognitive Processes)*, 30(1-2), 120-148.
DOI: [10.1080/01690965.2013.861917](https://doi.org/10.1080/01690965.2013.861917); PMID: 25642425; PMCID: PMC4306436
16. **Fedorenko, E.** (2014). The role of domain-general cognitive control in language comprehension. *Frontiers in Psychology*, 5:335.
DOI: [10.3389/fpsyg.2014.00335](https://doi.org/10.3389/fpsyg.2014.00335); PMID: 24803909; PMCID: PMC4009428
15. **Fedorenko, E.** & Thompson-Schill, S.L. (2014). Reworking the language network. *Trends in Cognitive Sciences*, 18(3), 120-126.
DOI: [10.1016/j.tics.2013.12.006](https://doi.org/10.1016/j.tics.2013.12.006); PMID: 24440115; PMCID: PMC4091770
14. Blank, I., Kanwisher, N. & **Fedorenko, E.** (2014). A functional dissociation between language and multiple-

- demand systems revealed in patterns of BOLD signal fluctuations. *Journal of Neurophysiology*, 112(5), 1105-1118.
 DOI: [10.1152/jn.00884.2013](https://doi.org/10.1152/jn.00884.2013); PMID: 24872535; PMCID: PMC4122731
13. **Fedorenko, E.**, Duncan, J. & Kanwisher, N. (2013). Broad domain-generalty in focal regions of frontal and parietal cortex. *PNAS*, 110(41), 16616-16621.
 DOI: [10.1073/pnas.1315235110](https://doi.org/10.1073/pnas.1315235110); PMID: 24062451; PMCID: PMC3799302
 12. **Fedorenko E.**, McDermott, J., Norman-Haignere, S. & Kanwisher, N. (2012). Sensitivity to musical structure in the human brain. *Journal of Neurophysiology*, 108(12), 3289-3300.
 DOI: [10.1152/jn.00209.2012](https://doi.org/10.1152/jn.00209.2012); PMID: 23019005; PMCID: PMC3544885
 11. **Fedorenko, E.**, Duncan, J. & Kanwisher, N. (2012). Language-selective and domain-general regions lie side by side within Broca's area. *Current Biology*, 22(21), 2059-2062.
 DOI: [10.1016/j.cub.2012.09.011](https://doi.org/10.1016/j.cub.2012.09.011); PMID: 23063434; PMCID: PMC3494832
 10. Nieto-Castañon, A. & **Fedorenko, E.** (2012). Subject-specific functional localizers increase sensitivity and functional resolution of multi-subject analyses. *NeuroImage*, 63(3), 1646-1669.
 DOI: [10.1016/j.neuroimage.2012.06.065](https://doi.org/10.1016/j.neuroimage.2012.06.065); PMID: 22784644; PMCID: PMC3477490
 9. Julian, J., Fedorenko, E., Webster, J. & Kanwisher, N. (2012). An algorithmic method for functionally defining regions of interest in the ventral visual pathway. *NeuroImage*, 60(4), 2357-2364.
 DOI: [10.1016/j.neuroimage.2012.02.055](https://doi.org/10.1016/j.neuroimage.2012.02.055); PMID: 22398396
 8. **Fedorenko, E.**, Nieto-Castañon, A. & Kanwisher, N. (2012). Lexical and syntactic representations in the brain: An fMRI investigation with multi-voxel pattern analyses. *Neuropsychologia*, 50(4), 499-513.
 DOI: [10.1016/j.neuropsychologia.2011.09.014](https://doi.org/10.1016/j.neuropsychologia.2011.09.014); PMID: 21945850; PMCID: PMC3292791
 7. **Fedorenko, E.**, Nieto-Castañon, A. & Kanwisher, N. (2012). Syntactic processing in the human brain: What we know, what we don't know, and a suggestion for how to proceed. *Brain and Language*, 120(2), 187-207.
 DOI: [10.1016/j.bandl.2011.01.001](https://doi.org/10.1016/j.bandl.2011.01.001); PMID: 21334056; PMCID: PMC3108014
 6. **Fedorenko, E.**, Behr, M. & Kanwisher, N. (2011). Functional specificity for high-level linguistic processing in the human brain. *PNAS*, 108(39), 16428-16433.
 DOI: [10.1073/pnas.1112937108](https://doi.org/10.1073/pnas.1112937108); PMID: 21885736; PMCID: PMC3182706
 5. Bedny, M., Pascual-Leone, A., Dodell-Feder, D., Fedorenko, E. & Saxe, R. (2011). Language processing in the occipital cortex of congenitally blind adults. *PNAS*, 108(11), 4429-4434.
 DOI: [10.1073/pnas.1014818108](https://doi.org/10.1073/pnas.1014818108); PMID: 21368161; PMCID: PMC3060248
 4. **Fedorenko, E.** & Kanwisher, N. (2011). Some regions within Broca's area *do* respond more strongly to sentences than to linguistically degraded stimuli: A comment on Rogalsky & Hickok (2010). *Journal of Cognitive Neuroscience*, 23(10), 2632-2635.
 DOI: [10.1162/jocn_a_00043](https://doi.org/10.1162/jocn_a_00043)
 3. **Fedorenko, E.** & Kanwisher, N. (2011). Functionally localizing language-sensitive regions in individual subjects with fMRI: A reply to Grodzinsky's critique of Fedorenko & Kanwisher (2009). *Language and Linguistics Compass*, 5(2), 78-94.
 DOI: [10.1111/j.1749-818X.2010.00264.x](https://doi.org/10.1111/j.1749-818X.2010.00264.x)
 2. **Fedorenko, E.**, Hsieh, P.-J., Nieto-Castañon, A., Whitfield-Gabrieli, S. & Kanwisher, N. (2010). A new method for fMRI investigations of language: Defining ROIs functionally in individual subjects. *Journal of Neurophysiology*, 104(2), 1177-1194.
 DOI: [10.1152/jn.00032.2010](https://doi.org/10.1152/jn.00032.2010); PMID: 20410363; PMCID: PMC2934923
 1. **Fedorenko, E.** & Kanwisher, N. (2009). Neuroimaging of language: Why hasn't a clearer picture emerged? *Language and Linguistics Compass*, 3, 839-865.
 DOI: [10.1111/j.1749-818X.2009.00143.x](https://doi.org/10.1111/j.1749-818X.2009.00143.x)

My older work, carried out during graduate school – behavioral investigations of language and cognition:

24. Scontras, G., Badecker W. & **Fedorenko, E.** (2017). Syntactic complexity effects in sentence production: A



- reply to MacDonald et al. (2016). *Cognitive Science*, 1-8.
DOI: [10.1111/cogs.12495](https://doi.org/10.1111/cogs.12495)
23. Singh, R., Fedorenko, E., Mahowald, K. & Gibson, E. (2015). Accommodating presuppositions is inappropriate in implausible contexts. *Cognitive Science*, 40(3), 607-634.
DOI: [10.1111/cogs.12260](https://doi.org/10.1111/cogs.12260); PMID: 26153044
22. Scontras, G., Badecker, W., Shank, L., Lim, E. & **Fedorenko, E.** (2015). Syntactic complexity effects in sentence production. *Cognitive Science*, 39(3), 559-583.
DOI: [10.1111/cogs.12168](https://doi.org/10.1111/cogs.12168); PMID: 25256303
21. Grosz, P., Patel-Grosz, P., Fedorenko, E. & Gibson, E. (2015). Constraints on Donkey pronouns. *Journal of Semantics*, 32(4), 619-648.
DOI: [10.1093/jos/ffu009](https://doi.org/10.1093/jos/ffu009)
20. Gibson, E., Jacobson, P., Graff, P., Mahowald, K., Fedorenko, E. & Piantadosi, S. (2015). A pragmatic account of complexity in definite Antecedent-Contained-Deletion relative clauses. *Journal of Semantics*, 32(4), 579-618.
DOI: [10.1093/jos/ffu006](https://doi.org/10.1093/jos/ffu006)
19. Gibson, E., Piantadosi, S. & Fedorenko, E. (2013). Quantitative methods in syntax / semantics research: A response to Sprouse & Almeida (2013). *Language and Cognitive Processes*, 28(3), 229-240.
DOI: [10.1080/01690965.2012.704385](https://doi.org/10.1080/01690965.2012.704385)
18. Gibson, E. & Fedorenko, E. (2013). The need for quantitative methods in syntax and semantics research. *Language and Cognitive Processes*, 28(1-2), 88-124.
DOI: [10.1080/01690965.2010.515080](https://doi.org/10.1080/01690965.2010.515080)
17. Levy, R., Fedorenko, E. & Gibson, E. (2013). The syntactic complexity of Russian relative clauses. *Journal of Memory and Language*, 69(4), 461-495.
DOI: [10.1016/j.jml.2012.10.005](https://doi.org/10.1016/j.jml.2012.10.005); PMID: 24711687; PMCID: [PMC3975271](https://pubmed.ncbi.nlm.nih.gov/PMC3975271/)
16. Perrachione, T., Fedorenko, E., Vinke, L., Gibson, E. & Dilley, L. (2013). Pitch processing is shared between language and music. *PLoS ONE*, 8(8): e73372.
DOI: [10.1371/journal.pone.0073372](https://doi.org/10.1371/journal.pone.0073372); PMID: 23977386; PMCID: [PMC3744486](https://pubmed.ncbi.nlm.nih.gov/PMC3744486/)
15. **Fedorenko, E.**, Woodbury, R. & Gibson, E. (2013). Direct evidence of memory retrieval as a source of difficulty in long-distance structural dependencies in language. *Cognitive Science*, 37(2), 378-394.
DOI: [10.1111/cogs.12021](https://doi.org/10.1111/cogs.12021); PMID: 23362990
14. Mahowald, K., Fedorenko, E., Piantadosi, S. & Gibson, E. (2013). Info/information theory: speakers choose shorter words in predictive contexts. *Cognition*, 126(2), 313-318.
DOI: [10.1016/j.cognition.2012.09.010](https://doi.org/10.1016/j.cognition.2012.09.010); PMID: 23116925
13. **Fedorenko, E.**, Piantadosi, S. & Gibson, E. (2012). The interaction of syntactic and lexical information sources in language processing: The case of the noun-verb ambiguity. *Journal of Cognitive Science*, 13(3), 249-285.
DOI: [10.17791/jcs.2012.13.3.249](https://doi.org/10.17791/jcs.2012.13.3.249)
12. Levy, R., Fedorenko, E., Breen, M. & Gibson, E. (2012). The processing of extraposed structures in English. *Cognition*, 122(1), 12-36.
DOI: [10.1016/j.cognition.2011.07.012](https://doi.org/10.1016/j.cognition.2011.07.012); PMID: 22035959; PMCID: [PMC3857735](https://pubmed.ncbi.nlm.nih.gov/PMC3857735/)
11. Frank, M., Fedorenko, E., Lai, P., Saxe, R. & Gibson, E. (2012). Verbal interference suppresses exact numerical representation. *Cognitive Psychology*, 64(1-2), 74-92.
DOI: [10.1016/j.cogpsych.2011.10.004](https://doi.org/10.1016/j.cogpsych.2011.10.004); PMID: 22112644
10. **Fedorenko, E.**, Piantadosi, S. & Gibson, E. (2012). Processing relative clauses in supportive contexts. *Cognitive Science*, 36(3), 471-497.
DOI: [10.1111/j.1551-6709.2011.01217.x](https://doi.org/10.1111/j.1551-6709.2011.01217.x); PMID: 22256956
9. Breen, M., Fedorenko, E., Wagner, M. & Gibson, E. (2010). Acoustic correlates of information structure. *Language and Cognitive Processes*, 25(7/8/9), 1044-1098.
DOI: [10.1080/01690965.2010.504378](https://doi.org/10.1080/01690965.2010.504378)
8. Gibson, E. & Fedorenko, E. (2010). Weak quantitative standards in linguistics research. *Trends in Cognitive*



- Sciences*, 14(6), 233-234.
DOI: [10.1016/j.tics.2010.03.005](https://doi.org/10.1016/j.tics.2010.03.005); PMID: 20363175
7. Tily, H., Fedorenko, E. & Gibson, E. (2010). The time-course of lexical and structural processes in sentence comprehension. *Quarterly Journal of Experimental Psychology*, 63(5), 910-927.
DOI: [10.1080/17470210903114866](https://doi.org/10.1080/17470210903114866); PMID: 19746299
 6. Fedorenko, E. & Gibson, E. (2010). Adding a third wh-element does not increase the acceptability of object-initial multiple-wh questions. *Syntax*, 13(3), 183-195.
DOI: [10.1111/j.1467-9612.2010.00138.x](https://doi.org/10.1111/j.1467-9612.2010.00138.x)
 5. Fedorenko, E., Patel, A., Casasanto, D., Winawer, J. & Gibson, E. (2009). Structural integration in language and music: Evidence for a shared system. *Memory and Cognition*, 37(1), 1-9. (*Recipient of the Best Article of the Year Award from the Psychonomic Society*)
DOI: [10.3758/MC.37.1.1](https://doi.org/10.3758/MC.37.1.1); PMID: 19103970
 4. Frank, M., Everett, D., Fedorenko, E. & Gibson, E. (2008). Number as a cognitive technology: Evidence from Pirahã language and cognition. *Cognition*, 108(3), 819-824.
DOI: [10.1016/j.cognition.2008.04.007](https://doi.org/10.1016/j.cognition.2008.04.007); PMID: 18547557
 3. Fedorenko, E., Gibson, E. & Rohde, D. (2007). The nature of working memory in linguistic, arithmetic and spatial integration processes. *Journal of Memory and Language*, 56(2), 246-269.
DOI: [10.1016/j.jml.2006.06.007](https://doi.org/10.1016/j.jml.2006.06.007)
 2. Fedorenko, E., Gibson, E. & Rohde, D. (2006). The nature of working memory capacity in sentence comprehension: Evidence against domain-specific resources. *Journal of Memory and Language*, 54(4), 541-553.
DOI: [10.1016/j.jml.2005.12.006](https://doi.org/10.1016/j.jml.2005.12.006)
 1. Costa, A., Kovacic, D., Fedorenko, E. & Caramazza, A. (2003). The gender congruency effect and the selection of freestanding and bound morphemes: Evidence from Croatian. *Journal of Experimental Psychology: LMC*, 29(6), 1270-1282.
DOI: [10.1037/0278-7393.29.6.1270](https://doi.org/10.1037/0278-7393.29.6.1270); PMID: 14622060

Other publications (select peer-reviewed conference proceedings and book/encyclopedia chapters):

- Kauf, C., Chersoni, E., Lenci, A., Fedorenko, E. & Ivanova, A. (2024). Log probabilities are a reliable estimate of semantic plausibility in base and instruction-tuned language models. *Proceedings of ACL*.
- Zhuang, C., Fedorenko, E. & Andreas, J. (2024). Lexicon-Level Contrastive Visual-Grounding Improves Language Modeling. *Proceedings of ACL*.
- Zhuang, C., Fedorenko, E. & Andreas, J. (2024). Visual Grounding Helps Learn Word Meanings in Low-Data Regimes. *Proceedings of NAACL*. (**Best Paper Award**).
- Hosseini, E. A., Fedorenko, E. (2023). Large language models implicitly learn to straighten neural sentence trajectories to construct a predictive representation of natural language. *Proceedings of Advances in Neural Information Processing Systems*.
- Wolf, L., Pimentel, T., Fedorenko, E., Cotterell, R., Warstadt, A., Wilcox, E., and Regev, T., 2023. Quantifying the redundancy between prosody and text. *Proceedings of EMNLP*.
- Hu, J., Floyd, S., Jouravlev, O., Fedorenko, E., & Gibson, E. (2023) A fine-grained comparison of pragmatic language understanding in humans and language models. *Proceedings of ACL* (Volume 1: Long Papers, 4194–4213).
- Srikant, S.*, Lipkin, B.*, Ivanova, A., Fedorenko, E., & O'Reilly, U. M. (2022). Convergent Representations of Computer Programs in Human and Artificial Neural Networks. *Proceedings of Advances in Neural Information Processing Systems* 35, 18834-18849.
- Tuckute, G.*, Sathe, A.*, Wang, M., Yoder, H., Shain, C., & Fedorenko, E. (2022). SentSpace: Large-Scale Benchmarking and Evaluation of Text using Cognitively Motivated Lexical, Syntactic, and Semantic Features. *Proceedings of NAACL* (pp. 99-113).
- Fedorenko, E. (2020). The brain network that supports high-level language processing. In Gazzaniga, Ivry,



Mangun (Ed.), *Cognitive Neuroscience: The Biology of the Mind* (5th edition). MIT Press, Cambridge, MA.

Gibson, E., Tily, H. & Fedorenko, E. (2014). The processing complexity of English relative clauses. In Sanz, Laka & Tanenhaus (Eds.), *Language down the garden path: The cognitive and biological basis for linguistic structure*. Oxford University Press.

Frank, M., Fedorenko, E. & Gibson, E. (2008). Language as a cognitive technology: English-speakers match like Pirahã when you don't let them count. *Proceedings of the 30th Annual Meeting of Cognitive Science Society*. (*Marr Prize*)

Preprints (alphabetical order):

Billot, A.*, Jhingan, N.*, Varkanitsa, M., Blank, I., Ryskin, R., Kiran, S.^ & Fedorenko, E.^ (2024). The language network ages well: Preserved selectivity, lateralization, and within-network functional synchronization in older brains. bioRxiv: <https://www.biorxiv.org/content/10.1101/2024.10.23.619954>

Bruffaerts, R., Pongos, A., Shain, C., Lipkin, B., Siegelman, M., Wens, V., ... & **Fedorenko, E.** (2023). Functional identification of language-responsive channels in individual participants in MEG investigations. bioRxiv: <https://www.biorxiv.org/content/10.1101/2023.03.23.533424>

de Varda, A. G., Malik-Moraleda, S., Tuckute, G., & **Fedorenko, E.** (2025). Multilingual Computational Models Reveal Shared Brain Responses to 21 Languages. bioRxiv: <https://www.biorxiv.org/content/10.1101/2025.02.01.636044>

Floyd, S.*, Jouravlev, O.*, Poliak, M., Mineroff, Z., Gibson, E.^, & **Fedorenko, E.**^ (2023). A tripartite structure of pragmatic language abilities: comprehension of social conventions, intonation processing, and causal reasoning. PsyArXiv: <https://osf.io/preprints/psyarxiv/e2xta>

Hosseini, E., Casto, C., Zaslavsky, N., Conwell, C., Richardson, M. & Fedorenko, E. (2024). Universality of representation in biological and artificial neural networks. bioRxiv: <https://www.biorxiv.org/content/10.1101/2024.12.26.629294>

Ivanova, A. A.*, Sathe, A.*, Lipkin, B.*, Kumar, U., Radkani, S., Clark, T. H. Kauf, C., Hu, J., Pramod, R. T., Grand, G., Paulun, V., Ryskina, M., Akyürek, E., Wilcox, E., Rashid, N., Choshen, L., Levy, R., Fedorenko, E., Tenenbaum, J. & Andreas, J. (2024). Elements of World Knowledge (EWOK): A cognition-inspired framework for evaluating basic world knowledge in language models. arXiv:2405.09605

Jouravlev, O., Mahowald, K., Paunov, A., Gibson, E., & **Fedorenko, E.** (2023). Evaluation of Psychometric Properties and Inter-test Associations for Three Popular Measures of Social Competence. psyRxiv: <https://osf.io/preprints/psyarxiv/es9wt>

Kauf, C., Kim, H. S., Lee, E. J., Jhingan, N., She, J. S., Taliaferro, M., Gibson, E. & **Fedorenko, E.** (2024). Linguistic inputs must be syntactically parsable to fully engage the language network. bioRxiv: <https://www.biorxiv.org/content/10.1101/2024.06.21.599332>

Kean, H., Fung, A., Pramod, R.T., Chomik-Morales, J., Kanwisher, N. & **Fedorenko, E.** (2024). Intuitive physical reasoning is not mediated by linguistic nor exclusively domain-general abstract representations. bioRxiv: <https://doi.org/10.1101/2024.11.25.625212>

Ozernov-Palchik, O.*, O'Brien, A. M.*, Lee, E. J., Richardson, H., Romeo, R., Lipkin, B., Small, H., Capella, J., Nieto-Castañón, A., Saxe, R., Gabrieli, J. D. E. & **Fedorenko, E.** (2024). Precision fMRI reveals that the language network exhibits adult-like left-hemispheric lateralization by 4 years of age. bioRxiv: <https://www.biorxiv.org/content/10.1101/2024.05.15.594172>

Tuckute, G., Lee, E.J., Sathe, A. & Fedorenko, E. (2024). A 3.5 minute-long reading-based fMRI localizer for the language network. bioRxiv: <https://www.biorxiv.org/content/10.1101/2024.07.02.601683>

**INVITED TALKS (select, from 2020 onwards):****Notation:**

- Departmental colloquia and similar
 - ❖ Workshops, symposia, and lecture series
 - Conference keynotes
-
- UC Santa Barbara, PBS / Mind and Machine Intelligence (Santa Barbara, CA). Dec 2024.
 - University of Pennsylvania, Department of Psychology (Philadelphia, PA). Sep 2024.
 - MGH Brain Map Seminar Series (Boston, MA). Sep 2024.
 - Stanford University, Department of Psychology (Stanford, CA). Dec 2023.
 - MIT, Department of Brain and Cognitive Sciences (Cambridge, MA). Oct 2023.
 - Rockefeller University, Neuroscience Seminar Series (New York, NY). Mar 2023.
 - Max Planck Institute for Psycholinguistics (Nijmegen, Netherlands). Feb 2023.
 - Yale University, fMRI Seminar Series (New Haven, CT). Feb 2023.
 - Johns Hopkins University, Cognitive Science Department (Baltimore, MD). Dec 2022.
 - Indiana University, Cognitive Science Program (Bloomington, IN). Nov 2022.
 - Moss Research Rehabilitation Institute (Philadelphia, PA; virtual). Feb 2022.
 - Higher School of Economics, Linguistics Department (Moscow, Russia; virtual). Feb 2022.
 - Penn State University, Center for Language Sciences (Philadelphia, PA; virtual). Nov 2021.
 - Institute of Language, Communications and the Brain (ILCB) (Aix-en-Provence/Marseille, France; virtual). Oct 2021.
 - University College London, Department of Experimental Psychology (London, UK; virtual). Oct 2021.
 - Columbia University, Center for Theoretical Neuroscience (New York, NY). Oct 2021.
 - Harvard University, Cognition, Brain & Behavior Seminar Series (virtual). Sep 2021.
 - MGH Brain Map Seminar Series (Boston, MA; virtual). May 2021.
 - MRC CBU Chaucer Club Seminar Series (Cambridge, UK; virtual). Feb 2021.
 - Royal Holloway University of London, Department of Psychology (London, UK; virtual). Jan 2021.
 - UCLA, Behavior, Evolution, and Culture (BEC) Seminar Series (Los Angeles, CA; virtual). Jan 2021.
 - UC Irvine, Linguistics Department (Irvine, CA; virtual). Dec 2020.
 - CMU, Language Technologies Institute (Pittsburgh, PA; virtual). Nov 2020.
 - OSU, Psychology Department and the CCBBI Imaging Center (virtual). Oct 2020.
 - Georgetown University, Interdisciplinary Program in Neuroscience (Washington DC; virtual). Mar 2020.
-
- ❖ ***Language and thought in the human brain.*** Simons Institute Workshop on LLMs. (San Francisco, CA). Feb 2025.
 - ❖ ***Neural network language models as models of language processing in the human brain.*** BRAIN NeuroAI Workshop at NIH. (Bethesda, MD). Oct 2024.
 - ❖ ***Language is distinct from thought in the human brain.*** The Royal Society, “Beyond the symbols vs. signals debate”. (London, UK). Oct 2024.
 - ❖ ***The language system in the broader landscape of the human brain.*** Lake Conference, “Comparative and evolutionary biology”. (Seattle, WA). Oct 2024.
 - ❖ ***Neural network language models as models of language processing.*** NeuroAI workshop. (Tromsø → Trondheim, Norway). Sep 2024.
 - ❖ ***The relationship between language and thought, and how it pertains to human intelligence.*** Santa Fe Institute. (Santa Fe, NM). Aug 2024.
 - ❖ ***The Utility of Large Language Models in Understanding the Human Language System.*** AAAS



- Annual Meeting. (Denver, CO). Feb 2024.
- ❖ ***The human language system.*** The Price Family Center for the Social Brain Symposium at Rockefeller University. (New York, NY). Nov 2023.
 - ❖ ***Language in brains and machines.*** Generative AI: Shaping the future Symposium at MIT. (Cambridge, MA). Nov 2023.
 - ❖ ***Unveiling the neural substrates of language development through precision fMRI.*** Neurobiology of Language Symposium (Marseille, France). Oct 2023. (co-organized with Ola Ozernov-Palchik)
 - ❖ ***The language system in the human brain.*** Neurobiology NOW Symposium at Harvard Medical School (Cambridge, MA). Oct 2023.
 - ❖ ***A journey into Dan Everett's brain.*** From fieldwork to linguistic theory: A tribute to Dan Everett (Cambridge, MA). Jun 2023.
 - ❖ ***Large language models are promising as models of human language processing.*** C-Star Lecture Series (virtual). Mar 2023.
 - ❖ ***The human language system.*** Brigham and Women's Hospital Neurology Rounds Seminar Series (Boston, MA). Feb 2023.
 - ❖ ***The human language system.*** EMNLP conference workshop, "Multilingual Representation Learning". Nov 2022.
 - ❖ ***A universal language network in the human brain.*** A workshop on vocalization and language at the Annual Meeting of the Society for Social Neuroscience. Nov 2022.
 - ❖ ***The language system in the human mind and brain.*** The Edinburgh Lectures in Language Evolution (ELLE). Jun 2022.
 - ❖ ***The language system in the human brain.*** ACL conference workshop, "Workshop on Commonsense Representation and Reasoning" (Dublin, Ireland / virtual). May 2022.
 - ❖ ***The power of individual-level analyses in fMRI.*** CNS Symposium "Insights into human cognition from precision fMRI of individuals" (San Francisco, CA). May 2022.
 - ❖ ***How minds and brains create language.*** NIH. Apr 2022.
 - ❖ ***The human language system in the mind and brain.*** Learning Salon Series. Feb 2022.
 - ❖ ***The human language system in the mind and brain.*** Innovators in Cognitive Neuroscience Seminar Series. Dec 2021.
 - ❖ ***The human language system in the mind and brain.*** Talk series "Construction grammar explorations" at the Interdisciplinary Centre for Research on Lexicography, Valency and Collocation at the University of Erlangen-Nürnberg (virtual). Nov 2021.
 - ❖ ***The human language system in the mind and brain.*** A conference jointly organized by the Tianqiao and Chrissy Chen Institute and AAAS/Science (Virtual). Oct 2021.
 - ❖ ***Language in the mosaic of social cognition.*** Workshop "Dialogue, memory, and emotion" (Virtual). May 2021.
 - ❖ ***Efficient communication—not enabling complex thought—is the computational goal of the language system.*** MPI for Psycholinguistics 40th Anniversary event "The Neurobiology of Language: Key Issues and Ways Forward" (virtual due to COVID19). Apr 2021. <https://www.mpi.nl/events/neurobiology-language-key-issues-and-ways-forward/videos>
 - ❖ ***Artificial neural networks as models of language processing in the human brain.*** Columbia University seminar "When Machines Speak: Language Processing in Computers and Humans". (virtual due to COVID19). Mar 2021.
 - ❖ ***Broca's area is not a natural kind.*** International Brain Mapping Symposium. (virtual due to COVID19). Mar 2021.
 - ❖ ***The neural mechanisms of language processing and their relationship to executive function mechanisms.*** C-STAR Lecture Series (<https://cstar.sc.edu/lecture-series/>) (virtual due to COVID19). Sep 2020. <https://www.youtube.com/watch?v=p6cM8R4roEg>
 - ❖ ***Artificial Neural Networks as models of language comprehension in the human brain.*** RepL4NLP Workshop at ACL (virtual due to COVID19). Jul 2020.



- ❖ ***The language system in the human mind and brain.*** Abralín ao Vivo, the talk series of the Brazilian Linguistics Association (<https://www.abralin.org/site/en/evento/abralin-ao-vivo-2020/>) (virtual). May 2020. <https://www.youtube.com/watch?v=hqrsHmhcRSQ>
- ❖ Cancelled due to COVID19: University of Tübingen Workshop “Grounded and Symbolic Representations in Language Processing” (Tübingen, Germany). May 2020.
- ❖ Cancelled due to COVID19: EvoLang Workshop “Evolution of the Extended Language System” (Brussels, Belgium). Apr 2020.
- ❖ Cancelled due to COVID10: BU Symposium “Language and Domain General Cognitive Processing in Stroke and Dementia” (Boston, US). Apr 2020.

- Conference on Language Models (COLM) (Philadelphia, PA). Oct 2024.
- The 10th International Conference of the German Cognitive Linguistics Association (DGKL) (Tübingen, Germany). Sep 2024.
- Sharif Neuroscience Symposium (Tehran, Iran; attending virtually). Mar 2023.
- Applied Machine Learning Days: Generative AI (Lausanne, Switzerland). Aug 2023.
- Linguistic Evidence (Paris, France). Oct 2022.
- The 20th International Conference of the Italian Association for Artificial Intelligence (AIxIA2021) (virtual). Dec 2021.
- The 2021 Conference on Empirical Methods in Natural Language Processing (EMNLP) (virtual). Nov 2021.
- The 11th International Conference on Construction Grammar (ICCG11) (virtual). Aug 2021.
- The 5th Usage-Based Linguistics Conference (virtual). Jul 2021.

TEACHING:

Classes taught / co-taught:

Instructor, BCS MIT (with Ted Gibson), “**9.s913: *Language and meaning in minds, brains and machines***”, Spring 2025.

Instructor, BCS MIT, “**9.39: *Language in the mind and brain***”, Spring 2023, 2024.

Instructor, BCS MIT (with Rebecca Saxe), “**9.S914: *Developmental Cognitive Neuroscience***”, Fall 2022.

Instructor, 4-lecture series at University of Paris, France, “***The human language system***”, Fall 2022.

Instructor, BCS MIT, “**9.39: *Language in the mind and brain***”, Spring 2022.

Instructor, BCS MIT, “**9.S52: *Language in the mind and brain***”, Spring 2021.

Instructor, LOT Winter School at UvA (Amsterdam, Netherlands), “***Language and Music***”, January 2015.

Co-Instructor (with Ted Gibson), BCS MIT, “**9.591: *Language processing: An introduction to the experimental investigation of language, above the word level***”, Fall 2008.

Co-Instructor (with Ted Gibson), LSA Summer Institute at Stanford University, “***Working memory and informational constraints in language processing***”, Summer 2007.

Invited external lectures:

Lecturer, Cold Spring Harbor Laboratory, “**Genetics and Neurobiology of Language**” (Cold Spring Harbor, NY), July 2024.

Lecturer, 11th annual Computational & Cognitive Neuroscience Summer School (CCNSS) (Souzhou, China/virtual), July 2023.

Lecturer, Cold Spring Harbor Laboratory, “**Genetics and Neurobiology of Language**” (Cold Spring Harbor, NY), July 2022.



Lecturer, The 9th IMPRS NeuroCom Summer School at MPI CBS (Leipzig, Germany), June 2019.
Lecturer, The Brains, Minds, and Machines Summer Course (Woods Hole, MA), August 2018.
Lecturer, Cold Spring Harbor Laboratory, “Genetics and Neurobiology of Language” (Cold Spring Harbor, NY), July 2018.
Lecturer, Kavli Summer Institute in Cognitive Neuroscience, July 2018.
Lecturer, Cold Spring Harbor Laboratory, “Genetics and Neurobiology of Language” (Cold Spring Harbor, NY), July-August 2014, July 2016.

ADVISING:

NB: **bold** = current advisees.

Postdoc advising:

- **Greta Tuckute** (MIT), February 2025 – present.
- **Saima Malik-Moraleda** (MIT), November 2024 – present.
- **Kumar Duraivel** (MIT), September 2024 – present.
- **Eghbal Hosseini** (MIT), May 2024 – present.
- **Agata Wolna** (MIT), February 2024 – present.
- **Halie Olson** (MIT), June 2023 – present.
- **Tamar Regev** (MIT), November 2019 – present.
- Maria Ryskina (MIT), November 2022 – October 2024.
- Chengxu Zhuang (MIT), August 2022 – August 2024 (next career stage: OpenAI).
- Cory Shain (MIT), May 2021 – July 2024 (next career stage: Asst Prof at Stanford).
- Anna Ivanova (MIT), Summer 2022 – December 2023 (next career stage: Asst Prof at Georgia Tech).
- Samantha Floyd (MIT), September 2021 – June 2023 (next career stage: Asst Prof at Sarah Lawrence).
- Alexander Paunov (MIT), June 2019 – September 2020 (next career stage: Postdoctoral Fellow at NeuroSpin in Paris).
- Rachel Ryskin, postdoc (MIT), June 2016 – July 2019 (co-advising with Ted Gibson), July 2019 – July 2020 (primary advisor) (next career stage: Asst Prof at UC Merced).
- Jayden Ziegler (MIT), June-August 2019 (next career stage: Apple, Inc.).
- Idan Blank (MIT), August 2016 – July 2019 (next career stage: Asst Prof at UCLA).
- Melissa Kline (MIT/Harvard), March 2016 – December 2017 (next career stage: Center for Open Science).
- Olessia Jouravlev (MIT), April 2015 – August 2017 (next career stage: Asst Prof at Carleton University).

Graduate (PhD and Masters) advising:

PhD students for whom I was/am the primary mentor or co-mentor:

- **Colton Casto** (SHBT), PhD, Fall 2024 – present (co-advised with Nancy Kanwisher).
- **Benjamin Lipkin** (MIT), PhD, Fall 2023 – present (co-advised with Roger Levy).
- **Hope Kean** (MIT), PhD, Fall 2020 – present.
- Greta Tuckute (MIT), PhD, Fall 2020 – Fall 2024 (next career stage: postdoc at MIT).
- Saima Malik Moraleda (SHBT), PhD, Fall 2018 – Fall 2024 (next career stage: postdoc at MIT).
- Eghbal Hosseini (MIT), PhD, Summer 2019 – Spring 2024 (next career stage: postdoc at MIT).
- Carina Kauf (MIT; co-advised with Roger Levy), PhD, Spring 2020 – Spring 2024.
- Anna Ivanova (MIT), PhD, Fall 2017 – Summer 2022 (next career stage: postdoc at MIT; now faculty at



- Georgia Tech).
- Alex Paunov (MIT; co-advised with Ted Gibson), PhD, Spring 2015 – Fall 2016, Fall 2018 (next career stage: postdoc at MIT; now a postdoc at Neurospin in Paris).
 - Idan Blank (MIT; co-advised with Nancy Kanwisher), PhD, Fall 2011 – Spring 2016 (next career stage: postdoc at MIT; now faculty at UCLA).

Masters students and students I helped advise:

- Elizabeth Lee (MIT), MEng, Summer 2023 – Spring 2024.
- Lara Rakocevic (MIT; co-advised with Noga Zaslavsky), MEng, Summer 2020 – Fall 2020.
- Jeanne Gallée (SHBT; co-advised with Brad Dickerson), PhD, Fall 2019 – Fall 2020 (next career stage: postdoc at U Washington).
- Jayden Ziegler (Harvard; co-advised with Jesse Snedeker), PhD, Fall 2016 – Spring 2019 (next career stage: postdoc at MIT).
- Moataz Assem (Bogazici University, Turkey; co-advised with Ahmet Ademoglu), Masters, 2015-2016 (next career stage: PhD student at MRC CBU).

Post-bac advising (full-time RAs):

- **Aaron Wright**, Fall 2024 – present.
- **Chiebuka Ohams**, Summer 2024 – present.
- **Anvitha Kachinthaya**, Summer 2024 – present.
- **Selena She**, Summer 2023 – present.
- **Alexander Fung**, Summer 2023 – present.
- **Sara Swords**, October 2022 – present.
- Hee So Kim, January 2023 – summer 2024 (next career stage: PhD student at CMU).
- Niharika Jinghan, Summer 2021 – Summer 2024 (next career stage: Masters student at Harvard).
- Aalok Sathe, Summer 2021 – Summer 2024 (next career stage: PhD student at Brown).
- Colton Casto, Summer 2021 – Summer 2023 (next career stage: PhD student at Harvard (SHBT)).
- Maya Taliaferro, Summer 2021 – Summer 2023 (next career stage: PhD student at NYU).
- Ben Lipkin, Summer 2020 – Summer 2022 (next career stage: PhD student at MIT).
- Francis Mulligan, Fall 2021 – Spring 2022.
- Hannah Small, Summer 2019 – Summer 2021 (next career stage: PhD student at JHU).
- Josef Affourtit, Summer 2019 – Summer 2021.
- Alvince Al Pongos, January 2019 – Summer 2021 (next career stage: PhD student at Berkeley/UCSF).
- Hope Kean, Summer 2018 – Summer 2020 (next career stage: PhD student at MIT).
- Nafisa Syed, Summer 2019 (next career stage: Masters student at MIT).
- Greta Tuckute, Summer 2018 (next career stage: Masters and then PhD student at MIT).
- Matt Siegelman, Summer 2016 – Summer 2018 (next career stage: PhD student at Columbia University).
- Evgeniia Diachek, Fall 2016 – Summer 2018 (next career stage: PhD student at Vanderbilt University).
- Dima Ayyash, Spring 2016 – Summer 2017.
- Caitlyn Hoeflin, Summer 2015 – Fall 2016.
- Brianna Pritchett, Summer 2015 – Summer 2017 (next career stage: Masters student at Georgia Tech).
- Zach Mineroff, Summer 2015 – Summer 2017 (next career stage: Masters student at CMU).



SERVICE:

Committees MIT:

- BCS/SCC Faculty Search Committee, Fall 2024.
- MIT Quest Council, Spring 2024 – present.
- BCS Education Committee, Fall 2021 – present.
- MIT Broad Faculty Search Committee, Spring 2021.
- MIT COUHES Committee, Fall 2020 – present.
- BCS Council, Fall 2019 – present.
- BCS Seminars Committee, Fall 2019 – present.

Committees – other:

- Harvard Program in Speech and Hearing Bioscience and Technology Admissions Committee, 2017-2021, 2023, 2024.
- Secretary, Society for the Neurobiology of Language, Summer 2019 – November 2022.

Conference / workshop organization (select):

- Cognitive Computational Neuroscience (CCN; Cambridge, MA). 2024. Organizer (with Talia Konkle).
- Symposium “Genetics and cognitive neuroscience: What does the future hold?” (CNS; San Francisco, CA). 2017. Organizer.
- Workshop “The Relationship between Executive Functions and Language Processing” (MIT; Cambridge, MA). 2017. Cambridge, MA. Organizer.
- CUNY Conference on Sentence Processing (MIT; Cambridge, MA). 2017. Organizing Committee.

NIH reviewing:

- NICHD Learning Disabilities Innovation Hubs initiative, April 2022
- NINDS Neurological Sciences and Disorders Panel, June 2021.
- NINDS Special Emphasis Panel, February 2020.

NSF reviewing:

- NSF Panel on Cognitive Neuroscience, December 2020.

Ad-hoc grant reviewer: NSF; Simons Foundation.

Senior Editor at Neurobiology of Language: Summer 2019 – present.

Ad-hoc journal reviewer: Behavioral & Brain Sciences; Cell; Cerebral Cortex; Cognition; Cognitive Science; Current Biology; eLife; Human Brain Mapping; Journal of Experimental Psychology; LMC; Journal of Memory & Language; Journal of Cognitive Neuroscience; Journal of Neurophysiology; Journal of Neuroscience; Nature; Nature Communications; Nature Human Behavior; Nature Neuroscience; Nature Scientific Data; NeuroImage; PLOS Biology; PLOS Computational Biology; PLoS One; PNAS; Psychological Science; Science; Science Advances; Trends in Cognitive Sciences, among others.

PROFESSIONAL SOCIETY MEMBERSHIP:

- American Physiological Association
- Association for Psychological Science
- Cognitive Neuroscience Society
- Society for the Neurobiology of Language
- Society for Neuroscience



PUBLIC OUTREACH (select):

- 2024: The SFI podcast, “Nature of intelligence”. <https://www.santafe.edu/culture/podcasts/ep-2-the-relationship-between-language-and-thought>
- 2024: The Many Minds podcast, “Your brain on language.” <https://disi.org/your-brain-on-language/>
- 2024: The Mind and Matter podcast. <https://mindandmatter.substack.com/podcast>
- 2024: Scientific American, “You don’t need words to think.” <https://www.scientificamerican.com/article/you-dont-need-words-to-think/>
- 2024: New York Times, “Do we need language to think?” <https://www.nytimes.com/2024/06/19/science/brain-language-thought.html>
- 2024: PNAS Front Matter, “Can ChatGPT help researchers understand how the human brain handles language?” <https://www.pnas.org/doi/10.1073/pnas.2410196121>
- 2024: The Transmitter, “Can an emerging field called ‘neural systems understanding’ explain the brain?” <https://www.thetransmitter.org/neural-networks/can-an-emerging-field-called-neural-systems-understanding-explain-the-brain>
- 2023: The Atlantic, “The difference between speaking and thinking” <https://www.theatlantic.com/technology/archive/2023/01/chatgpt-ai-language-human-computer-grammar-logic/672902>
- 2023: New York Times, “The animals are talking: What does it mean?” <https://www.nytimes.com/2023/09/20/magazine/animal-communication.html>
- 2022: New York Times, “The curious hole in my head.” <https://www.nytimes.com/2022/09/04/science/brain-language-research.html>
- 2022: Brain Inspired podcast. <https://braininspired.co/podcast/144/>
- 2022: APA podcast. <https://www.apa.org/news/podcasts/speaking-of-psychology/languages>
- 2022: Live Science, “Can we think without language?” <https://www.livescience.com/can-we-think-without-language>
- 2022: Washington Post, “The remarkable brain of a carpet cleaner who speaks 24 languages.” <https://www.washingtonpost.com/dc-md-va/interactive/2022/multilingual-hyperpolyglot-brain-languages/>
- 2022: WIRED, “She was missing a chunk of her brain. It didn’t matter.” <https://www.wired.com/story/she-was-missing-a-chunk-of-her-brain-it-didnt-matter/>
- 2021: World Science Festival, “Mind Your Language: Thought, Metaphor, and Imagination” (a panel discussion with Brian Greene; other participants: Noam Chomsky, Daniel Dor, and Steven Pinker). <https://www.youtube.com/watch?v=6LXHtDUXkS0>
- 2021: Science/AAAS Custom Publishing Office Webinar “The shrinking distance between human and machine: Computing where we end and the technologies begin”. <https://www.sciencemag.org/custom-publishing/webinars/shrinking-distance-between-human-and-machine-computing-where-we-end-and>
- 2021: Alan Alda’s “Science Clear and Vivid” podcast. <https://podcasts.apple.com/us/podcast/how-your-mind-creates-language/id1535702219?i=1000521539107>
- 2021: Stephen Wilson’s “Language Neuroscience” podcast. <https://www.listennotes.com/podcasts/the-language/a-conversation-with-ev-KMSmRzpngiB/>
- 2020: subtitlepod.com, podcast with Patrick Cox, “Is a polyglot’s brain different?” <https://subtitlepod.com/is-a-polyglots-brain-different/>
- 2019: CangaroEnglish, interview with Christian Saunders for “Language and the brain.” <https://youtu.be/d8YM7gy0OmU>
- 2019: BBC, interview with Simon Calder for “The Polyglots. The superlinguists.” <https://www.bbc.co.uk/programmes/w3csz4pt>
- 2018: Science for the Public, interview with Yvonne Stapp for “Language acquisition: How many



February 2025

languages can you learn?” <http://www.scienceforthepublic.org/life/language-acquisition-how-many-languages-can-you-learn>

- 2018: New Yorker, interview with Judith Thurman for “The mystery of people who speak dozens of languages.” <https://www.newyorker.com/magazine/2018/09/03/the-mystery-of-people-who-speak-dozens-of-languages>