

Rachel A. Ryskin

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Positions

Assistant Professor. 2020 - *present*
University of California, Merced. Cognitive and Information Sciences

Postdoctoral Associate. 2019 - 2020
Massachusetts Institute of Technology. Brain and Cognitive Sciences
Advisor: Evelina Fedorenko

NIH NRSA Postdoctoral Fellow. 2016-2019
Massachusetts Institute of Technology. Brain and Cognitive Sciences
Boston University. Speech, Language, and Hearing Sciences
Advisors: Edward Gibson (MIT) & Swathi Kiran (BU)

Education

Ph.D. in Cognitive Psychology. 2016
University of Illinois at Urbana-Champaign
Advisor: Sarah Brown-Schmidt

B.A. in Cognitive Science. 2010
B.A. in European Studies. 2010
Northwestern University

Awards & Honors

Infinite Kilometer Postdoctoral Award. MIT School of Science. 2020

NIH/NIDCD F32 Ruth L. Kirschstein National Research Service Award. 2016-2019
Role: PI (Co-sponsors: Ted Gibson, Swathi Kiran)
Title: *Mechanisms of adaptation in (healthy and aphasic) noisy-channel comprehension*

Preregistration Challenge Prize. Center for Open Science. 2018

Sarah C. Mangelsdorf Award. Psychology, University of Illinois at Urbana-Champaign. 2016

Alumni Advisory Board Graduate Student Travel Award. Psychology, UIUC. 2016

Cognitive Science / AI Award. Beckman Institute for Advanced Science and Technology. 2015

William Brewer Teaching Award. Psychology, UIUC. 2015

Nancy Hirschberg Memorial Award. Psychology, UIUC. 2015

University Fellowship. Psychology, UIUC. 2012

Undergraduate Summer Research Fellowship. Cognitive Science, Northwestern U. 2009

Grants

NIH R15 AG073948 (Role: PI) 2021-2024
Prediction in language across the lifespan.

Publications

Peer-Reviewed Journal Articles

1. Ostrand, R. & Ryskin, R. (accepted pending data collection). Registered Report: Speaker-specific syntactic expectations. *Journal of Cognitive Neuroscience*
2. Rezaii, N., Mahowald, K., Ryskin, R., Dickerson, B. & Gibson, E. (in press). A Lexico-Syntactic Trade-off in Language Production: Evidence from Primary Progressive Aphasia. *Proceedings of the National Academy of Sciences*
3. Liu, Y., Ryskin, R., Futrell, R. & Gibson, E. (in press). A Verb-frame Frequency Account of Constraints on Long-Distance Dependencies in English. *Cognition*, 222, 104902. <https://doi.org/10.1016/j.cognition.2021.104902>
4. 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. <https://doi.org/10.1016/j.neuropsychologia.2021.107855>
5. 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. <https://doi.org/10.1016/j.neuropsychologia.2019.107258>
6. Ryskin, R. A., Ng, S., Mimnaugh, K., Brown-Schmidt, S., & Federmeier, K. D. (2020). Talker-specific predictions during language processing. *Language, Cognition, & Neuroscience*, 35. 797-812. <https://doi.org/10.1080/23273798.2019.1630654>
7. Ryskin, R. A., Kurumada, C., & Brown-Schmidt, S. (2019). Information integration in the modulation of pragmatic inferences. *Cognitive Science*, 43. e12769. <https://doi.org/10.1111/cogs.12769>
8. Ryskin, R. A., Futrell, R., Kiran, S. & Gibson, E. (2018). Comprehenders model the nature of noise in the environment. *Cognition*, 181. 141-150. <https://doi.org/10.1016/j.cognition.2018.08.018> **[Center for Open Science Preregistration Challenge Prize]**
9. Ryskin, R. A., Qi, Z., Covington, N., Duff, M., & Brown-Schmidt, S. (2018). Knowledge and learning of verb bias in amnesia. *Brain and Language*, 180-182. 62-83. <https://doi.org/10.1016/j.bandl.2018.04.003>
10. Ryskin, R. A., Qi, Z., Duff, M., & Brown-Schmidt, S. (2017). Verb biases are shaped through lifelong learning. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 43. 781-794. <https://dx.doi.org/10.1037/xlm0000341>
11. Ryskin, R. A., Wang, R. F., & Brown-Schmidt, S. (2016). Listeners use speaker identity to access representations of spatial perspective during online language comprehension. *Cognition*, 147. 75-84. <https://doi.org/10.1016/j.cognition.2015.11.011>
12. Ryskin, R. A., Benjamin, A. S., Tullis, J., & Brown-Schmidt, S. (2015). Perspective-taking in comprehension, production, and memory: an individual differences approach. *Journal of Experimental Psychology: General*, 144. 898-915. <https://psycnet.apa.org/doi/10.1037/xge0000093>
13. Ryskin, R. A., Brown-Schmidt, S., Canseco-Gonzalez, E., Yiu, L., & Nguyen, E. (2014). Visuospatial perspective-taking in conversation and the role of bilingual experience. *Journal of Memory and Language*, 74. 46-76. <https://doi.org/10.1016/j.jml.2014.04.003>
14. Ryskin, R. A. & Brown-Schmidt, S. (2014). Do adults show a curse of knowledge in false-belief reasoning? A robust estimate of the true effect size. *PLoS ONE*, 9(3): e92406. <https://doi.org/10.1371/journal.pone.0092406>

15. Rapp, D.N., Hinze, S.R., Kohlhepp, K., & Ryskin, R.A. (2014). Reducing reliance on inaccurate information. *Memory and Cognition*, 42, 11-26. <https://doi.org/10.3758/s13421-013-0339-0>

Proceedings, Chapters, and Commentaries

16. Ryskin, R. & Fang, X. (2021). The Many Timescales of Context in Language Processing. In K. D. Fed-ermeier & L. Sahakyan (Eds.), *Psychology of Learning and Motivation: The Context of Cognition: Emerg-ing Perspectives*, Vol. 75, pp. 201–243. San Diego, CA: Elsevier Academic Press. <https://doi.org/10.1016/bs.plm.2021.08.001>
17. Ryskin, R., Stevenson, S. & Heller, D. (2020). Probabilistic weighting of perspectives in dyadic com-munication. *Proceedings of the Cognitive Science Society*, Toronto, CA.
18. Liu, Y., Ryskin, R., Futrell, R. & Gibson, E. (2019). Verb Frequency Explains the Unacceptability of Fac-tive and Manner-of-speaking Islands in English. *Proceedings of the Cognitive Science Society*, Montreal, CA.
19. Ryskin, R. A. & Brown-Schmidt, S. (2017). The malleability of linguistic representations poses a chal-lenge to the priming-based experimental approach. *Behavioral and Brain Sciences*, 40, E309. Com-mentary on target article: *An Experimental Approach to Linguistic Representation*. <https://doi.org/10.1017/s0140525x17000577>
20. Ryskin, R. A., Yoon, S., & Brown-Schmidt, S. (2015). Language, memory, and perspectives, in *Emerging Trends in the Social and Behavioral Sciences* (eds.) Robert Scott and Stephen Kosslyn, Hoboken, NJ: John Wiley and Sons. <https://doi.org/10.1002/9781118900772.etrds0200>
21. Brown-Schmidt, S., Yoon, S., & Ryskin, R. A. (2015). People as contexts in conversation. In B. H. Ross (Ed.), *Psychology of Learning and Motivation*, Vol. 62. San Diego, CA: Elsevier Academic Press. <https://doi.org/10.1016/bs.plm.2014.09.003>
22. Ryskin, R. A. & Brown-Schmidt, S. (2011). The impact of gender and bilingualism on cognition: the case of spatial perspective-taking. *Proceedings of the 15th annual workshop on the semantics and pragmatics of dialogue (SemDial)*, Los Angeles, CA.

Preprints

23. Ryskin, R., Salinas, M., Piantadosi, S. & Gibson, E. (in revision). Real-time pragmatic inference across cultures: evidence from a non-industrialized society. *PsyArXiv*. <https://doi.org/10.31234/osf.io/ga83j>
24. Chen, X., Affourtit, J., Ryskin, R., Regev, T., Norman-Haignere, S., Jouravlev, O., Malik-Moraleda, S., Kean, H., Varley, R., & Fedorenko, E. (in revision). The human language system does not support music processing. *bioRxiv*. <https://doi.org/10.1101/2021.06.01.446439>
25. Ryskin, R., Bergen, L., & Gibson, E. (preprint). Agreement errors are predicted by rational inference in sentence processing. *PsyArXiv*. <https://doi.org/10.31234/osf.io/uaxsq>

Presentations

Conference Talks

- James, A. et al. (2022). What paradigms can webcam eye-tracking be used for? Attempted replications of 5 “classic” cognitive science experiments (as part of the symposium on ‘Automated gaze-tracking and gaze-annotation for online studies of cognition and development’). Cognitive Development Soci-ety, Madison, WI.
- Zhang, Y.[†], Ryskin, R. & Gibson, E. (2021). A Noisy-channel Explanation for Depth-charge Illusions. Architectures and Mechanisms of Language Processing (AMLaP), Paris, France
- Fang, X.[†] & Ryskin, R. (2021). Talker-specific and talker-general learning in speech comprehension. California Meetup on Psycholinguistics, Irvine, CA

- Liu, Y.[†], Ryskin, R., Futrell, R. & Gibson, E. (2021). The role of construction frequency in listeners' noisy-channel inferences. 45th Penn Linguistics Conference, Philadelphia, PA
- Rezaii, N., Mahowald, K., Ryskin, R., Dickerson, B. & Gibson, E. (2021). Syntactic Rule Frequency as a Measure of Syntactic Complexity: Insights from Primary Progressive Aphasia [short talk] Virtual CUNY Conference on Human Sentence Processing, Philadelphia, PA
- Ricciardi, G.[†], Ryskin, R., & Gibson, E. (2021). English locative inversions are not special in terms of their discourse function [short talk] Virtual CUNY Conference on Human Sentence Processing, Philadelphia, PA
- Ryskin, R., Stevenson, S., & Heller, D. (2020). Probabilistic weighting of perspectives in dyadic communication. Cognitive Science Society, Toronto, CA
- Ricciardi, G.[†], Ryskin, R., & Gibson, E. (2020). Epistemic 'must p' is literally a strong statement. Experiments in Linguistic Meaning (ELM), Philadelphia, PA
- Liu, Y.[†], Ryskin, R., Futrell, R., & Gibson, E. (2019). Verb Frequency Explains the Unacceptability of Factive and Manner-of-speaking Islands in English. To be presented at the 41st Annual Meeting of the Cognitive Science Society, Montréal, Canada.
- Ricciardi, G.[†], Gibson, E., & Ryskin, R. A. (January, 2019). Experiment on epistemic must. Presented at the 93rd Annual Meeting of the Linguistic Society of America. New York, NY
- Ryskin, R. A., Gibson, E., & Kiran, S. (October, 2018). Adaptation to the noise in aphasic sentence comprehension. Academy of Aphasia 56th Annual Meeting, Montréal, Canada.
- Ryskin, R. A., Qi, Z., Duff, M., & Brown-Schmidt, S. (March, 2018). The effects of aging on verb bias use and learning. 31st Annual CUNY Conference on Human Sentence Processing, Davis, CA.
- Ryskin, R. A., Futrell, R., & Gibson, E. (July, 2017). Comprehenders model the nature of noise in the environment. 39th Annual Meeting of the Cognitive Science Society, London, UK.
- Ryskin, R. A., Qi, Z., Duff, M., & Brown-Schmidt, S. (March, 2017). Syntactic variability between and within speakers: When to adapt, when to generalize? 30th Annual CUNY Conference on Human Sentence Processing, Cambridge, MA.
- Ryskin, R. A., Kurumada, C., & Brown-Schmidt, S. (March, 2016). Bottom-up adaptation of online pragmatic inferences to variability of speakers. 29th Annual CUNY Conference on Human Sentence Processing, Gainesville, FL.
- Ryskin, R.A., Brown-Schmidt, S., Tullis, J., & Benjamin, A. (March, 2015). Perspective-taking: a domain-general cognitive ability? 28th Annual CUNY Conference on Human Sentence Processing, Los Angeles, CA.
- Ryskin, R. A. & Brown-Schmidt, S. (November, 2012). A bilingual disadvantage in linguistic perspective adjustment. 53rd annual meeting of the Psychonomic Society, Minneapolis, MN.
- Ryskin, R. A. & Brown-Schmidt, S. (October, 2012). Contributions of gender and bilingualism to spatial perspective-taking. 3rd annual UIC Bilingualism Forum, Chicago, IL
- Rapp, D.N. & Ryskin, R. (November, 2010). Proofreading fosters resistance to the effects of inaccurate information. 51st annual meeting of the Psychonomic Society, St. Louis, MO.

Invited/Colloquium Talks

- Lifelong learning of language representations. *Sleep, Language, & Memory Lab*, York U. 02.2022
- Communication in context across timescales. *Computational Cognitive Science Lab*, U. of Edinburgh. 11.2021

- Lifelong learning and contextual inference underlie language understanding. *Developmental Psychology Colloquium*, UC Merced. 09.2021
- Human language processing is adapted to noise. *HCI group meeting*, UC Merced. 03.2021
- Real-time pragmatic inference across cultures: evidence from a non-industrialized society. *Language Lab meeting*, MIT. 12.2020
- The role of context in predictive language processing, *Cognitive Psychology Colloquium*, UCLA. 11.2020
- The role of context in predictive language processing, *Cognitive Psychology Brownbag*, UIUC. 11.2020
- The role of context in predictive language processing. *Mind, Technology, & Society Talk Series*, UC Merced. 10.2020
- The role of context in predictive language processing. *Cognition & Language Workshop*, Stanford. 02.2020
- Lifelong Learning of Linguistic Representations. *Computational Linguistics Lab*. University of Pisa. 05.2019
- Lifelong Learning of Linguistic Representations. *Computation and Language Discussion Group*. MIT. 05.2019
- Error-correction in language comprehension: Implications for aphasia. *Speech, Language, and Hearing Sciences Colloquium*, Boston U. 02.2018
- Syntactic processing is shaped by learning: The role of context and memory systems. *Language & Cognition Meeting*, Harvard. 04.2017
- Aphasia as rational inference over a noisy channel: Is the noise model malleable? *Language Processing and Recovery in Aphasia Symposium*. Center for Research in Sensory Communication and Emerging Neural Technology (CRESCENT), Boston U. 04.2017
- Language comprehension in context. *Spring Cross-Program Gathering of the Sargent College Committee Enhancing Research and Collaboration in Health & Rehabilitation*, Boston U. 03.2017
- Learning about how other people talk: The case of syntax. *Aphasia Research Mini-Symposium*, Department of Speech, Language, and Hearing Sciences, Boston U. 09.2016
- How do listeners encode spatial perspectives? *Language processing talk series*, Beckman Institute, UIUC. 09.2014

Conference Posters

- Poliak, M., Ryskin, R., Braginsky, M. & Gibson, E. (2022). Effects of the structural prior on noisy-channel inference: evidence from Russian. *Human Sentence Processing*. University of California, Santa Cruz
- Ryskin, R. & Nicolette-Sanchez (2021). Linguistic prediction across the lifespan. *Annual Meeting of the Psychonomic Society*, New Orleans, LA.
- Zhang, Z.[†], Bergen, L., Ryskin, R., Paunov, A. & Gibson, E. (2021). How People Talk Affects the Implications That Others Make. *Architectures and Mechanisms of Language Processing (AMLaP)*, Paris, France
- Weng, Y., Ryskin, R., & Qi, Z. (2020). Neural representation of syntactic prediction: A simultaneous eye-tracking and EEG study. *Society for the Neurobiology of Language*
- Ryskin, R. & Fedorenko, E. (2020). Individual-subject functional localization does not benefit ERP analyses. *Society for the Neurobiology of Language*.
- Liu, Y.[†], Ryskin, R., Futrell, R., & Gibson, E. (2020). The role of construction frequency in listeners' noisy-channel inferences. *Architectures and Mechanisms of Language Processing (AMLaP)*, Potsdam, Germany

- Ryskin, R., Stevenson, S., & Heller, D. (2020). Probabilistic weighting of perspectives in dyadic communication. *Cognitive Modeling and Computational Linguistics (CMCL) workshop*
- Liu, Y.[†], Ryskin, R., Futrell, R., & Gibson, E. (2020). Structural Frequency Effects in Comprehenders' Noisy-Channel Inferences. *CUNY Conference on Human Sentence Processing, Amherst, MA*
- Weng, Y., Nguyen, A., Ryskin, R. & Qi, Z. (2020). Stronger prediction leads to greater processing cost during sentence ambiguity resolution: A simultaneous eye-tracking and EEG study. *CUNY Conference on Human Sentence Processing, Amherst, MA*
- Ricciardi, G.[†], Ryskin, R., & Gibson, E. (2020). The distribution of locative inversions: testing structural vs processing accounts. *CUNY Conference on Human Sentence Processing, Amherst, MA*
- Ricciardi, G.[†], Ryskin, R., & Gibson, E. (2020). Epistemic 'must p' is literally a strong statement. *CUNY Conference on Human Sentence Processing, Amherst, MA*
- Rezaii, N., Ryskin, R., Cordella, C., Dickerson, B. & Gibson, E. (2020). An Information-Theoretic Characterization of Language Production in Primary Progressive Aphasia. *CUNY Conference on Human Sentence Processing, Amherst, MA*
- Ryskin, R., Futrell, R., Kiran, S., & Gibson, E. (2019). Comprehenders aggregate over speakers when adapting to the noise in the input. *Architectures and Mechanisms of Language Processing, Moscow, RU.*
- Ryskin, R., Salinas, M.[†], Piantadosi, S., Rubio-Fernandez, P. & Gibson, E. (2019). Pragmatic inferences are modulated by informativity across cultures. *32nd Annual CUNY Conference on Human Sentence Processing, Boulder, CO.*
- Ryskin, R., Gibson, E., & Kiran, S. (2019). Noisy-channel sentence comprehension in aphasia: the role of noise in the context. *32nd Annual CUNY Conference on Human Sentence Processing, Boulder, CO.*
- Liu, Y.[†], Ryskin, R., Futrell, R., & Gibson, E. (2019). Factive and manner-of-speaking islands are an artifact of nonlinearity in the acceptability judgment task. *32nd Annual CUNY Conference on Human Sentence Processing, Boulder, CO.*
- Campbell, R.[†], Ryskin, R. & Kiran, S. (October, 2018). A novel eye tracking paradigm for assessing semantic and phonologic activation in aphasia. *Academy of Aphasia 56th Annual Meeting, Montréal, Canada.*
- Nathaniel, S.[†], Ryskin, R. A., & Gibson, E. (March, 2018). Investigating the effect of context on sentence comprehension. *31st Annual CUNY Conference on Human Sentence Processing, Davis, CA.*
- Ryskin, R. A., Fine, A., & Brown-Schmidt, S. (March, 2017). Do listeners learn speaker/accent-specific syntactic biases? *30th Annual CUNY Conference on Human Sentence Processing, Cambridge, MA.*
- Ryskin, R. A., Qi, Z., Covington, N., Duff, M., & Brown-Schmidt, S. (March, 2017). Knowledge and learning of verb biases in amnesia. *30th Annual CUNY Conference on Human Sentence Processing, Cambridge, MA.*
- Ryskin, R. A., Ng, S., Mimnaugh, K., Brown-Schmidt, S., & Federmeier, K. (March, 2017). Speaker-specific predictions about category membership during language comprehension. *Cognitive Neuroscience Society 24th annual meeting, San Francisco, CA.*
- Ryskin, R. A., Kurumada, C., & Brown-Schmidt, S. (November, 2016). Information integration in on-line modulation of pragmatic inferences during language comprehension. *57th annual meeting of the Psychonomic Society, Boston, MA.*
- Ryskin, R. A., Qi, Z., Duff, M. & Brown-Schmidt, S. (March, 2016). Constraints on adaptation to syntactic variability between and within speakers. *29th Annual CUNY Conference on Human Sentence Processing, Gainesville, FL.*
- Ryskin, R. A., Qi, Z., & Brown-Schmidt, S. (November, 2015). Rapid learning of verb bias. *56th annual meeting of the Psychonomic Society, Chicago, IL.*

- Ryskin, R. A., Brown-Schmidt, S., & Kurumada, C. (March, 2015). Adaptation of pragmatic inferences transfers across contrastive domains. 28th Annual CUNY Conference on Human Sentence Processing, Los Angeles, CA.
- Ryskin, R. A., Wang, R.F., & Brown-Schmidt, S. (November, 2014). How do listeners encode spatial perspectives? 55th annual meeting of the Psychonomic Society, Long Beach, CA.
- Ryskin, R. A. & Brown-Schmidt, S. (November, 2013). Do adults show a curse of knowledge in false-belief reasoning? A robust estimate of the true effect size. 54th annual meeting of the Psychonomic Society, Toronto, Canada.
- Ryskin, R. A., Canseco-Gonzalez, E, Yiu, L., Nguyen, E., Lopez, L., Hammond-Oakley, C. B., & Brown-Schmidt, S. (May, 2013). A bilingual disadvantage in linguistic perspective adjustment. International Workshop for Bilingualism and Cognitive Control, Krakow, Poland.
- Ryskin, R. A. & Brown-Schmidt, S. (May, 2012). Contributions of gender and bilingualism to spatial perspective-taking. 2nd Annual Midwest Cognitive Science Conference, Bloomington, IN.
- Ryskin, R. A. & Brown-Schmidt, S. (September, 2011). The impact of gender and bilingualism on cognition: The case of spatial perspective-taking. 15th annual workshop on the semantics and pragmatics of dialogue (SemDial), Los Angeles, CA.
- Kohlhepp, K., Ryskin R., & Rapp, D.N. (May, 2011). Editing what's wrong to avoid learning it: Proof-reading as intervention. Midwestern Psychological Association, Chicago, IL.

† indicates undergraduate or graduate advisee

Teaching

Spring 2022. COGS210 Statistics for Cognitive Scientists. UC Merced
 Spring 2022. COGS005 Introduction to Language & Linguistics. UC Merced
 Fall 2021. COGS180 Language in Brains & Machines. UC Merced
 Spring 2021. COGS210 Statistics for Cognitive Scientists. UC Merced
 Spring 2021. COGS250 Seminar in Cognitive Science. UC Merced

Professional service

Ad hoc reviewing

Journals

Acta Psychologica. Applied Psycholinguistics. Bilingualism: Language & Cognition. Brain & Language. Cerebral Cortex. Cerebral Cortex Communications. Child Development. Cognition. Cognitive Science. Cognitive Psychology. Dialogue & Discourse. Discourse Processes. Human Brain Mapping. Journal of Experimental Psychology: General. Journal of Experimental Psychology: Learning, Memory & Cognition. Journal of Memory & Language. Language, Cognition, & Neuroscience. Language & Linguistics Compass. Memory & Cognition. Neuroimage. Open Mind. PLOS One. Psychological Science. Proceedings of the National Academy of Sciences. Social, Cognitive, & Affective Neuroscience. Visual Cognition

Grants

PRELUDIUM pre-doctoral grant, National Science Center, Poland.

Conference reviewing

AMLaP (2020, 2021). Cognitive Modeling and Computational Linguistics (CMCL) workshop (2020, 2021, 2022). CogSci Conference (2016, 2017, 2018, 2019, 2020, 2021, 2022). Conference on Human Sentence Processing [formerly CUNY] (2016, 2017, 2018, 2019, 2020, 2021, 2022). International Conference on Computational Linguistics (COLING. 2020). Meaning in Context Workshop at NeurIPS (2021). Society for the Neurobiology of Language (SNL. 2020, 2021)

Conference organization

CUNY 2017 Conference on Human Sentence Processing at MIT. Organizing Committee

Media coverage

Is Perspective-Taking a Skill? Psychology Today, October 22, 2015

www.psychologytoday.com/blog/ulterior-motives/201510/is-perspective-taking-skill

Updated: June 10, 2022