Marten van Schijndel

Curriculum Vitae

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Employment

2019-present	**Assistant Professor**, *Department of Linguistics, Cornell University*.
2017-2019	**Postdoctoral Fellow (PI: Tal Linzen)**, *Department of Cognitive Science, Johns Hopkins University*.

Education

2011-2017	**PhD in Linguistics (Advisor: William Schuler)**, *The Ohio State University*. Dissertation: *The Influence of Syntactic Frequencies on Human Sentence Processing*
2005-2009	**BA in Linguistics**, *Western Washington University*. Cum Laude

Publications

Journal Articles

2021 **Marten van Schijndel** and Tal Linzen, "Single-stage prediction models do not explain the magnitude of syntactic disambiguation difficulty." In *Cognitive Science*, 45(6): e12988.

2020 Cory Shain, Idan Blank, **Marten van Schijndel**, William Schuler, and Evelina Fedorenko, "fMRI reveals language-specific predictive coding during naturalistic sentence comprehension." In *Neuropsychologia*, 138 (17). 2020 .

2016 Rajakrishnan Rajkumar, **Marten van Schijndel**, Michael White, and William Schuler, "Investigating locality effects and surprisal in written English syntactic choice phenomena." In *Cognition*, 155: 204–232. 2016.

Alessandra Zarcone, **Marten van Schijndel**, Jorrig Vogels, and Vera Demberg, "Salience and attention in surprisal-based accounts of language processing." In *Frontiers in Psychology*, 7 (844). 2013.

2013 **Marten van Schijndel**, Andy Exley, and William Schuler, "A model of language processing as hierarchic sequential prediction." In *Topics in Cognitive Science*, 5 (3): 522–540. 2013.

Peer-Reviewed Proceedings

2021 William Timkey and **Marten van Schijndel**, "All Bark and No Bite: Rogue Dimensions in Transformer Language Models Obscure Representational Quality." In *Proceedings of the 2021 Conference on Empirical Methods in Natural Language Processing (EMNLP 2021)*.

Forrest Davis and **Marten van Schijndel**, "Uncovering Constraint-Based Behavior in Neural Models via Targeted Fine-Tuning." In *Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics and the 11th International Joint Conference on Natural Language Processing (ACL-IJCNLP 2021)*, (21% accept).

Matt Wilber, William Timkey, and **Marten van Schijndel**, "To Point or Not to Point: Understanding How Abstractive Summarizers Paraphrase Text." In *Findings of the Association for Computational Linguistics: ACL-IJCNLP 2021*, (15% accept).

Samuel Ryb and **Marten van Schijndel**, "Analytical, Symbolic and First-Order Reasoning within Neural Architectures." In *Proceedings of the 2021 Workshop on Computing Semantics with Types, Frames and Related Structures*.

2020   Forrest Davis and **Marten van Schijndel**, "Recurrent neural network language models always learn English-like relative clause attachment." In *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics (ACL 2020)*.
(23% accept)

Forrest Davis and **Marten van Schijndel**, "Interaction with context during recurrent neural network sentence processing" In *Proceedings of the 42nd Annual Virtual Meeting of the Cognitive Science Society (CogSci 2020)*.
(23% oral)

Debasmita Bhattacharya and **Marten van Schijndel**, "Filler-gaps that neural networks fail to generalize" In *Proceedings of the SIGNLL Conference on Computational Natural Language Learning (CoNLL 2020)*.
(23% accept)

Forrest Davis and **Marten van Schijndel**, "Discourse structure interacts with reference but not syntax in neural lnguage models" In *Proceedings of the SIGNLL Conference on Computational Natural Language Learning (CoNLL 2020)*.
(23% accept)

2019   **Marten van Schijndel** and Tal Linzen, "Quantity doesn't buy quality syntax with neural language models" In *Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing (EMNLP)*.
(24% accept)

Grusha Prasad, **Marten van Schijndel**, and Tal Linzen, "Using Priming to Uncover the Organization of Syntactic Representations in Neural Language Models" in *Proceedings of the 2019 Conference on Computational Natural Language Learning (CoNLL)*.
(2% oral)

Marten van Schijndel and Tal Linzen, "Can Entropy Explain Successor Surprisal Effects in Reading?" In *Proceedings of the Society for Computation in Linguistics (SCiL)*. 2019.
(23% oral)

2018   **Marten van Schijndel** and Tal Linzen, "A Neural Model of Adaptation in Reading." In *Proceedings of the 2018 Conference on Empirical Methods in Natural Language Processing (EMNLP)*. 2018.
(10% oral)

Marten van Schijndel and Tal Linzen, "Modeling garden path effects without explicit hierarchical syntax." In *Proceedings of the 40th Annual Meeting of the Cognitive Science Society (CogSci)*. 2018.

Cory Shain, **Marten van Schijndel**, and William Schuler, "Deep syntactic annotations for broad-coverage psycholinguistic modeling." In *Proceedings of the Workshop on Linguistic and Neuro-Cognitive Resources (LiNCR)*. 2018.

2017   **Marten van Schijndel** and William Schuler, "Approximations of Predictive Entropy Correlate with Reading Times." In *Proceedings of the 39th Annual Meeting of the Cognitive Science Society (CogSci)*. 2017.
(29% oral)

2016   **Marten van Schijndel** and William Schuler, "Addressing surprisal deficiencies in reading time models." In *Proceedings of the Computational Linguistics for Linguistic Complexity Workshop (CL4LC)*. 2016.
(24% oral)

Cory Shain, **Marten van Schijndel**, Richard Futrell, Edward Gibson, and William Schuler, "Memory access during sentence processing causes reading time latency." In *Proceedings of the Computational Linguistics for Linguistic Complexity Workshop (CL4LC)*. 2016.
(24% oral)

2015   **Marten van Schijndel** and William Schuler, "Hierarchic syntax improves reading time prediction." In *Proceedings of the 2015 Conference of the North American Chapter of the Association for Computational Linguistics – Human Language Technologies (NAACL)*. 2015.
(13% oral)

Marten van Schijndel, Brian Murphy, and William Schuler, "Evidence of syntactic working memory usage in MEG data." In *Proceedings of the 6th Workshop on Cognitive Modeling and Computational Linguistics (CMCL)*. 2015.

Evan Jaffe, Lifeng Jin, David King, and **Marten van Schijndel**, "Azmat: Sentence similarity using associative matrices." In *Proceedings of the International Workshop on Semantic Evaluation (Semeval)*. 2015.

2014   **Marten van Schijndel** and Micha Elsner, "Bootstrapping into Filler-Gap: An Acquisition Story." In *Proceedings of the 52nd Annual Meeting of the Association for Computational Linguistics (ACL)*. 2014.
(13% oral)

Marten van Schijndel, William Schuler, and Peter Culicover, "Frequency Effects in the Processing of Unbounded Dependencies." In *Proceedings of the 36th Annual Meeting of the Cognitive Science Society (CogSci)*. 2014.

2013   **Marten van Schijndel** and William Schuler, "An Analysis of Frequency- and Memory-Based Processing Costs." In *Proceedings of 2013 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL)*. 2013.
(20% oral)

Marten van Schijndel, Luan Nguyen, and William Schuler, "An Analysis of Memory-based Processing Costs using Incremental Deep Syntactic Dependency Parsing." In *Proceedings of the 4th Workshop on Cognitive Modeling and Computational Linguistics (CMCL)*. 2013.

2012 Luan Nguyen, **Marten van Schijndel**, and William Schuler, "Accurate Unbounded Dependency Recovery using Generalized Categorial Grammars." In *Proceedings of the 24th International Conference on Computational Linguistics (Coling)*. 2012. (16% oral) Best Paper Award.

Marten van Schijndel, Andy Exley, and William Schuler, "Connectionist-Inspired Incremental PCFG Parsing." In *Proceedings of the 3rd Workshop on Cognitive Modeling and Computational Linguistics (CMCL)*. 2012.

Presentations

2021 "Language Statistics Won't Solve Language Processing", October 15, 2021. *Invited Talk*, NLP Seminar, Georgia Tech.

2020 "Language is not Language Processing", May 13, 2020. *Invited Talk*, Brain and Cognitive Sciences, MIT.

"The impact of predictability on human reading", February 11, 2019. *Invited Talk*, Cognitive Science Proseminar, Cornell University.

"Using psycholinguistics to analyze and improve neural network language models", January 31, 2020. *Invited Talk*, AI Seminar, Cornell University.

2019 "Quantity doesn't buy quality syntax in neural language models", November 7, 2019. *2019 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, Hong Kong, HK.

"Model Selection", March 28, 2019. *Invited Talk*, University of Edinburgh.

"Adaptive Language Modeling for Psycholinguistics", March 28, 2019. *Invited Talk*, University of Edinburgh.

"Probing Neural Network Representations", February 8, 2019. *Invited Talk*, Cornell University.

"Garden Pathing Neural Networks", February 7, 2019. *Invited Talk*, Cornell University.

"Can Entropy Explain Successor Surprisal Effects in Reading?", January 4, 2019. *Proceedings of the Society for Computation in Linguistics (SCiL)*, New York, NY.

2018 "A Neural Model of Adaptation in Reading", November 4, 2018. *2018 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, Brussels, BE.

"Can Entropy Explain Successor Surprisal Effects in Reading?", September 7, 2018. *Architectures and Mechanisms of Language Processing (AMLaP)*, Berlin, DE.

"A Neural Network Model of Adaptation in Reading", September 6, 2018. *Architectures and Mechanisms of Language Processing (AMLaP)*, Berlin, DE.

"A Cognitively Plausible Adaptive Neural Language Model", May 12, 2018. *Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC-SLL)*, Baltimore, MD.
(20% oral)

2017 "The Statistics of the Unseen Influence Reading Times", September 8, 2017. *Invited Talk*, Cognitive Science, Johns Hopkins University.

"The Statistics of the Unseen Influence Reading Times", August 1, 2017. *Invited Talk*, Psychology, University of Essex.

"Approximations of Predictive Entropy Correlate with Reading Times", July 29, 2017. *39th Annual Conference of the Cognitive Science Society (CogSci 2017)*, London, UK.

"Approximations of Predictive Entropy Correlate with Reading Times", May 5, 2017. *Midwest Speech and Language Days & Midwest Computational Linguistics Colloquium 2017*, Chicago, IL, USA.

2016 "Screening for Alzheimer's with psycholinguistics", March 5, 2016. *CUNY Human Sentence Processing Conference*, Gainesville, FL, USA.

"Alpha power decreases during center embedding in natural stimuli", March 3, 2016. *CUNY Human Sentence Processing Conference*, Gainesville, FL, USA.

"Can measures of processing complexity predict progressive aphasia from speech?", March 3, 2016. *CUNY Human Sentence Processing Conference*, Gainesville, FL, USA.

2015 "Frequencies that matter in sentence processing", September 7, 2015. *Invited talk*, Institut for Natural Language Processing (Institut für Maschinelle Sprachverarbeitung), University of Stuttgart.

"Controlling for confounds in online measures of sentence complexity", July 28, 2015. *Invited talk*, Computer Science and Computational Linguistics, University of Saarland.

"Identifying EEG measures of memory and attentional load in language processing", July 2, 2015. *Invited talk*, Computer Science and Computational Linguistics, University of Saarland.

"Evidence of syntactic working memory usage in MEG data", June 4, 2015. *6th Workshop on Cognitive Modeling and Computational Linguistics (CMCL 2015)*, Denver, CO, USA.

"Hierarchic syntax improves reading time prediction", June 3, 2015. *2015 Conference of the North American Chapter of the Association for Computational Linguistics – Human Language Technologies (NAACL 2015)*, Denver, CO, USA.

"Hierarchic syntax improves reading time prediction", March 21, 2015. *CUNY Human Sentence Processing Conference*, Los Angeles, CA, USA.

2014 "Frequency Effects in the Processing of Unbounded Dependencies", July 24, 2014. *36th Annual Conference of the Cognitive Science Society (CogSci 2014)*, Quebec, QC, Canada.

"Bootstrapping into Filler-Gap: An Acquisition Story", June 24, 2014. *52nd Annual Meeting of the Association for Computational Linguistics (ACL 2014)*, Baltimore, MD, USA.

"Effects of integration in eye tracking", March 15, 2014. *CUNY Sentence Processing Conference*, The Ohio State University.

"Bootstrapping into Filler-Gap: An Acquisition Story", March 13, 2014. *CUNY Sentence Processing Conference*, The Ohio State University.

2013   "Bootstrapping into Filler-Gap: An Acquisition Story", November 22, 2013. *The Ohio State University Linguistics Colloquium Fest*, The Ohio State University.

"An Analysis of Memory-based Processing Costs using Incremental Deep Syntactic Dependency Parsing", August 8, 2013. *The 4th Workshop on Cognitive Modeling and Computational Linguistics*, Sofia, Bulgaria.

"An Analysis of Frequency- and Memory-Based Processing Costs", June 10, 2013. *NAACL 2013*, Atlanta, GA, USA.

"An Analysis of Frequency- and Memory-Based Processing Costs", May 2, 2013. *Midwest Speech and Language Days*, Toyota Technological Institute of Chicago.

2012   "Prediction- and Recall-Defined Online Complexity Metrics", December 5, 2012. *The Ohio State University Linguistics Colloquium Fest*, The Ohio State University.

"Connectionist-Inspired Incremental PCFG Parsing", June 7, 2012. *The 3rd Workshop on Cognitive Modeling and Computational Linguistics*, McGill University.

Awards / Grants

2021   Migrations Initiative grant, *Xenophobia Meter Project: Tracking Xenophobic Twitter Speech to Inform (and Shift) Policy* ($85,428), Key Collaborator

Mario Einaudi Center for International Studies seed grant, *Xenophobia Meter Project* ($10,000), Key Collaborator

2020   Central NY Humanities Corridor Working Group: Computational Cognitive Models of Meaning [LIN14] ($1,500)

ACL 2020 Outstanding Reviewer

2014   Saarland University Visiting Fellowship in Language Science (CRC 1102)

OSU Targeted Investment in Excellence Grant

2013   National Science Foundation Graduate Research Fellowship (DGE-1343012)

G. Micheal Riley International Travel Award

OSU Targeted Investment in Excellence Grant

2012   Coling 2012 Best Paper Award

OSU Targeted Investment in Excellence Grant

2011   OSU University Fellowship

2009   WWU Outstanding Graduate Award

Service

2021   **NAACL 2021**, *Area Chair.*

Glossa: Psycholinguistics, *Editorial Board Member*.

Center for Data Science for Enterprise and Society Recruitment Committee, *Member*, Cornell.

North American Computational Linguistics Olympiad, *Organizer*.

2020   **Conference on Natural Language Learning (CoNLL) 2020**, *Area Chair*.

Center for Data Science for Enterprise and Society Recruitment Committee, *Member*, Cornell.

Linguistics Tenure-Track Search Committee, *Member*, Cornell.

North American Computational Linguistics Olympiad, *Organizer*.

2019   **EMNLP/CoNLL**, *Student/Postdoc Faculty Mentor*.

Linguistics Tenure-Track Search Committee, *Member*, Cornell.

Linguistics Graduate Admissions Committee, *Member*, Cornell.

2018   **8th Workshop on Cognitive Modeling in Computational Linguistics (CMCL)**, *Co-Organizer*.

Women in Science and Engineering, *Mentor*, JHU/Garrison Forest.

Provost's Undergraduate Research Award, *Reviewer*, JHU.

2017   **7th Workshop on Cognitive Modeling in Computational Linguistics (CMCL)**, *Co-Organizer*.

Funding Your Graduate Education Workshop, *Panelist*, OSU.

2015   **6th Workshop on Cognitive Modeling in Computational Linguistics (CMCL)**, *Co-Organizer*.

2014   **North American Computational Linguistics Olympiad**, *Student Organizer*.

2013   **NAACL 2013**, *Student Volunteer*.

2011–2014   **Laboratory and Computing Committee**, *Member*, OSU.

2011–2013   **Speakers Committee**, *Treasurer*, OSU.

Reviewing

Journal   Computational Linguistics; Transactions of the ACL; Language, Cognition and Neuroscience; Philosophical Transactions of the Royal Society B; Cognitive Science; Neuropsychologia; Glossa: Psycholinguistics; Open Mind; Language and Linguistics Compass

Conference   ACL, CMCL (Workshop on Cognitive Modeling in Computational Linguistics), CogSci, COLING, CoNLL, CUNY Sentence Processing Conference, EACL, EMNLP, LREC, NAACL

Teaching

2021   **Spring**, LING7710 Computational Seminar.

Spring, LING6603/6604 Research Workshop.

2020   **Autumn**, LING4434 Computational Linguistics 2.

Spring, LING4424 Computational Linguistics.

Spring, LING6603/6604 Research Workshop.

2019 **Autumn**, LING7710 Computational Seminar.

Autumn, LING1100 Language, Thought, and Reality: The Ethics of Artificial Intelligence.

2014 **Spring**, LING3701/PSYCH3371 Language and the Mind.

2013 **Autumn**, LING3701/PSYCH3371 Language and the Mind.

Updated

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