Tal Linzen is an Assistant Professor of Cognitive Science at Johns Hopkins University, where he is also affiliated with the Center for Language and Speech Processing. Before moving to Johns Hopkins in 2017, he was a postdoctoral researcher at the École Normale Supérieure in Paris, where he worked with Emmanuel Dupoux and Benjamin Spector; before that he obtained his PhD from the Department of Linguistics at New York University in 2015, under the supervision of Alec Marantz. At JHU, Dr. Linzen directs the Computational Psycholinguistics Lab, which develops computational models of human language comprehension and acquisition, as well as methods for interpreting and evaluating neural network models for natural language processing.

Neural networks have rapidly become central to NLP systems, yet their limitations are poorly understood. In this talk, I will demonstrate how experimental paradigms from psycholinguistics can help us characterize the gaps between the abilities of neural systems and those of humans, by focusing on interpretable axes of generalization from the training set rather than on average test set performance. I will show evidence that RNN language models are able to process syntactic dependencies in typical sentences with considerable success, but when evaluated on syntactically controlled materials, their error rate increases sharply. I will then discuss ongoing work applying this paradigm to neural NLI (natural language inference) systems; this work again indicates that those systems generalize much more poorly than their test set performance would suggest.