Abstract for the Invited Talk

Unsupervised NLP and Human Language Acquisition: Making Connections to Make Progress
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Natural language processing and cognitive science are two fields in which unsupervised language learning is an important area of research. Yet there is often little crosstalk between the two fields. In this talk, I will argue that considering the problem of unsupervised language learning from a cognitive perspective can lead to useful insights for the NLP researcher, while also showing how tools and methods from NLP and machine learning can shed light on human language acquisition. I will present two case examples, both of them models inspired by cognitive questions. The first is a model of word segmentation, which introduced new modeling and inference techniques into NLP while also yielding a better fit than previous models to human behavioral data on word segmentation. The second is more recent work on unsupervised grammar induction, in which prosodic cues are used to help identify syntactic boundaries. Preliminary results indicate that such cues can be helpful, but also reveal weaknesses in existing unsupervised grammar induction methods from NLP, suggesting possible directions for future research.

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