

Avril Kenney

Mentor: Eric Smith

To learn the lexicon of a language, children must learn not only a mapping between words and meanings, but also the sets of particular words and meanings to which the mapping applies. For both words and meanings, the ones actually used in a language are a small subset of all the ones possible, and the exact meanings are never explicitly specified but must be learned from examples. Because the real world is noisy, the word forms and meanings inferred by a learner might not perfectly match those of the speakers he learned from. The imperfect transfer from speakers to learners is therefore a mechanism by which language changes over time.

In this project, I will use agent-based modeling to simulate lexical change. The meaning of a word will be represented not as a single definite referent but as a distribution over a 'meaning space'. Learners will hear words uttered individually within contexts (in which some but not all of the situational features are relevant to the meanings), and they will learn the meanings by generalizing from the examples they experience. In this way, word meanings can change gradually by moving within a continuous space, as they do in natural language.