

Modeling word learning and its impact in reading comprehension

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Abstract: The full meaning of a word takes years to be learned, and we want to find the minimum that needs to be learned in order to efficiently read a text. We used Latent Semantic Analysis (LSA), Neural Networks (NN), and Semantic graphs to model word acquisition and reading comprehension. We modeled word learning using a corpus -Wikipedia- to train the NN and LSA; in the case of semantic graphs, each time a an unknown word appears it is probabilistically linked to the words in the passage. Comprehension in LSA and NN occurs when passage to passage cosine is over an adjustable threshold. In semantic graphs, comprehension occurs when a moving window of the text is connected in time through an adjustable number of direct links. We matched amount of learning of a word with comprehension. We plan to validate the parameters in the lab to devise Educational interventions.