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Authors

Duan, Yuguang

Lupyan, Gary

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Does surprisal affect word learning? Evidence from seven languages

Yuguang Duan

University of Wisconsin-Madison, Madison, Wisconsin, United States

Gary Lupyan

University of Wisconsin - Madison, Madison, Wisconsin, United States

Abstract

What makes a word easy to learn? We know that early-learned words tend to be frequent and name concrete referents. Here we investigate a novel predictor—a word’s surprisal – the ease of predicting it given a context. We computed surprisal for words in child-directed speech and used it to predict age of acquisition (AoA) while controlling for known predictors such as concreteness, frequency, and the mean length of the utterances in which the word appeared. Predicates with greater surprisal (i.e., those less predictable from context) were learned later. Noun learning was not dependent on surprisal. Surprisal was a powerful mediator of both frequency and concreteness, reducing the ordinarily strong effect of frequency and concreteness on AoA. Differences in surprisal across languages also proved to be moderately predictive of differences in AoA across languages: translation equivalents that had higher surprisal had later AoAs.