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Modeling Selection in Active Cross-situational Word Learning

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Word learning is an active process in which learners select referents and direct attention based on their current knowledge state. Understanding how learners actively select information can reveal the cognitive mechanisms underlying language acquisition. The present study reanalyzes data from Zettersten & Saffran (2021), in which adults and children (ages 3-8) learned novel word-referent mappings through cross-situational learning, then selected which referents to receive additional training on. We fit associative word learning models to individual training, selection, and test data, and inferred the most likely sampling strategies. Models with a bias to attend to stimuli with uncertain knowledge states best accounted for the data, though there were substantial individual differences in learning mechanisms. These findings suggest that reducing uncertainty drives sampling behavior across development, but that individual differences in learning parameters (in particular, learning rate and memory) are more predictive of word learning success than sampling strategy alone.