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Homogeneity Bias in Small Number Word Comprehension

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Abstract

Number words are often used in noun phrases referring to objects (e.g., “two balls”). This usage may suggest to children that numbers quantify same-kind sets. We investigated this hypothesis using a novel task that assessed English-speaking children’s (aged 3-11 years) preference for same-kind sets when asked for two or three objects. Across four experiments (N=167) children’s preference for same-kind sets was evaluated at the basic level (cows, horses, etc.), subordinate level (grey horses, brown horses), and superordinate level (animals, food). Children did not show any bias at the subordinate level, but they tended to produce same-kind sets when presented with items that differed at the basic or superordinate level. At the basic level, counting fluency was associated with children’s production of same-kind sets. Our results suggest that children interpret number words as referring to same-kind sets and this bias is particularly strong in children with limited number knowledge.