Contributions of Statistical Regularities to Semantic Development

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Abstract

Extensive findings attest to an early-emerging sensitivity to statistical regularities, such as reliable co-occurrence between perceptual inputs. However, we know little about how such sensitivity may shape the organization of semantic memory according to relations between concepts. To address this question, we designed a paradigm appropriate for a broad developmental age-range in which participants identify whether either a word or a picture is the same or of the same thing as a preceding word (e.g., chicken followed by chicken or a chicken picture). Semantic effects are inferred from slower correct no responses to pairs that are related versus those that are unrelated. We used this paradigm to assess semantic effects in 4-year-old children for pairs that co-occurred in child-directed speech (e.g., shoe-foot) or were taxonomically related (e.g., fork-bowl). We found evidence of semantic effects in all conditions, suggesting that co-occurrence sensitivity contributes to relational knowledge in emerging semantic networks.