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Evidence has been accumulating that young children's grammars are based on particular lexical items, specifically verbs (Tomasello 2000). This means that if a child says "John kicked the ball," and later, "John threw the ball" these sentences are not both produced using the transitive construction, but are each formed from autonomous item-based constructions. Item-based accounts emphasize gradual abstraction. This predicts that there should be a period during which children's grammars are not based around individual items, but are not yet as abstract as adults'. Little to no evidence for this "partial abstraction" phase currently exists. Demonstrating a phase of partial abstraction is the goal of the current study.

Evidence for abstract grammar in adults is shown by "structural priming" (Bock 1986). Structural priming is the phenomenon that conversants will tend to match each other's syntactic form in the face of an equally appropriate alternative. For example, a scene of giving from a father to a son could be described with the caused-motion (CM) construction as "The father gave a book to his son" or with the ditransitive (DIT) "The father gave his son a book." If an adult describes this scene with the CM (the prime utterance), then another adult is more likely to describe a subsequent throwing scene (the target utterance) as "The shortstop threw the ball to the first baseman" than "The shortstop threw the first baseman the ball." That no open-class words overlap in the prime and target utterances is evidence that the grammatical construction does not depend on any particular lexical item. If grammar is gradually generalized across individual lexical items then a partial abstraction period could be characterized by grammatical constructions being linked with a class of related words, and not single words. The current study examines this possibility by manipulating the semantic similarity between prime and target utterances.

Methods and Results

29 4 year-old (average 4;3) and 21 5 year-old children (average age 5;3) participated in a scene description task. The task consisted of three critical trials consisting of three scene descriptions each. The first two scenes were described by the experimenter and the child repeated. The child then described the third scene on his/her own. The primes and targets did not share open-class words. The scenes all came from three event categories: food sharing, sport playing, and classroom scenes. There were two scene conditions: high and low similarity. The high similarity condition consisted of the three scenes for each trial coming from the same event category. In the low similarity condition the scenes from each category were distributed across trials such that there was a scene from each category in each trial. There were two utterance conditions: the primes either described the scenes with the DIT or the CM. Table 1 shows the results. A matcher is defined as a child who matched the prime construction on at least one of the three trials.

Table 1: Frequencies of Matchers and Mis-Matchers

4 year olds	Matchers	Mis-Matchers
High Sim	10	5
Low Sim	3	11
5 year olds	**Matchers**	**Mis-Matchers**
High Sim	10	2
Low Sim	7	2

The log-linear analysis reveals a three way interaction, G^2 (4) = 13.46, $p < .01$. This interaction is explained by the higher rate of matchers for the high sim 4 year-olds than the low sim 4's, χ^2 (1) = 5.99, $p < .05$ and that similarity has no effect for the 5 year-olds, χ^2 (1) = .10, $p > .7$. These results support the claim that 4 year-olds are in a partial abstraction phase when their grammatical constructions are linked to classes of semantically related words, but by 5 years of age they have generalized beyond these classes.

References

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