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How do children represent syntactic structures? Syntactic priming effects – the unconscious repetition of syntactic structures between utterances and speakers – yield powerful evidence that adults retrieve abstract representations of syntactic relations during language production and comprehension [see 1, 2 for reviews]. Accordingly, syntactic priming has been used as a tool for examining children’s developing syntactic representations. Previous studies suggest that by three to four years, children have acquired abstract representations for transitive and ditransitive structures [3, 4]. Given these initial findings, recent work has begun to examine more precisely the nature of the syntactic representations that children retrieve when processing sentences [5].

The present study built on this work to explore the locus of syntactic priming effects in children’s language production. Adults exhibit priming between sentences that share constituent but not thematic structure. In a classic study, locative sentences (e.g., The 747 was landing by the control tower) primed passives as robustly as did passive primes (The 747 was alerted by the control tower) [6]. Note that the locative and passive primes shared function words (i.e. by) as well as constituent structure (i.e. NP-VP-PP), but involved different thematic role assignments (patient-agent in passives vs. agent-location in locatives). Later replications suggested that the shared function words were important [7].

We asked whether children are similarly susceptible to priming from shared constituent structure and function words, without shared thematic structure. We used a picture-description task [8] in which 4;6-year-olds (n=33) took turns with an experimenter to describe pictures. The form of the experimenter’s descriptions was manipulated within participants: the prime sentences included passives (A man was annoyed by the computer), locatives (A man was reading by the computer), and actives (A man was using the computer; Fig-1a). As in the adult studies, the locative and passive primes shared constituent structure and the function word ‘by’, but had different thematic structures.

Figure 1a: Active, passive, and locative prime items.
Figure 1b: Target item.

Children’s descriptions of transitive events (Fig-1b) were influenced by the primes. Planned comparisons revealed that children produced reliably more passives after passive primes than after either active (13% priming, p<.01) or locative primes (11% priming, p<.01), but did not produce more passives after locative than active primes (2% priming, p=.5).

Thus, hearing a sentence that shared constituent structure and function words but not thematic structure with the passive was not sufficient to prime children’s production of passives. Preliminary results suggest that adult participants show such priming in this task. If
so, then this suggests that different dimensions of sentence structure may differ in their contributions to syntactic priming for children and adults. Thematic role assignments can be primed in adult sentence production independent of constituent structure [9]; thus it is not the case that thematic structure plays no role in syntactic priming in adults. However in this study, to be primed to produce a passive, children required more than its constituent structure and the function word ‘by’; thus the priming of thematic role linking may have played a greater role than the priming of constituent structure or particular function words, for children compared to adults.

References: