

ABSTRACT

Syntactic priming in a strongly biased language: Investigating continuity of processing mechanisms across development

Syntactic priming is the tendency to unconsciously reproduce a previously encountered syntactic construction [1]. Furthermore, when a verb in the prime (currently processed sentence) and the target (subsequent production) is shared, syntactic replication is enhanced, resulting in the so-called lexical boost effect [2]. Priming effects have been confirmed in adults and children, whereas the lexical boost is shown to be absent in 3-6 year old English children [3,4] questioning the similarity of processing mechanisms across development.

Apart from this, most priming studies using the dative alternation for primes - double object (DO) vs. prepositional object (PO) (The man gave the woman the letter/the letter to the woman) - have been conducted in languages like English, where both structures are relatively equally frequent. However, little research has been carried out in strongly biased languages like German in which the DO structure is up to 80-90% overpreferred. We raised 2 questions: (1) Can syntactic priming boost the dispreferred PO production in German? (2) Can this typologically different language contribute to disentangle two major priming models - Implicit Learning [5,6] and Residual Activation [2,7] - both finding support in the literature?

In a video description task, we primed monolingual German-speaking children (age 3-6 years; n=33) and adults (n=37) with PO and DO structures using either the same (SV) or different verb (DV) in prime and target in order to test for the lexical boost effect, following the methodology outlined in [3]. Additionally, we incorporated a baseline condition containing intransitive (neutral) primes.

The results revealed a 16% increase in PO production after a PO prime than after an intransitive prime, in both children ($p=0.01$) and adults ($p=0.03$). This finding gives support to the Implicit Learning mechanism which claims that rare or infrequent structures result in stronger priming compared to their frequent counterparts due to surprisal effects [9]. Interestingly, we did not find any priming effects for DO's. Moreover, priming effects in children reveal the presence of abstract structural representations in alignment with adults, speaking in favour of early abstraction accounts of acquisition [8].

Concerning the same and different verb manipulations, adults showed a lexical boost effect (41%; $p < .001$), whereas children did not, in line with the literature. This particular result can be explained by both theories. On the Implicit Learning account the absence of the lexical boost in children is attributed to children's weak explicit memory traces, whereas according to the Residual Activation account children's argument structures are not linked to verbs yet.

However, neither of the two models proposed can interpret the following observation: irrespective of SV or DV condition, each adult produced at least 1 PO after a PO prime whereas 1/3 of the children haven't produced any. This effect might be attributed to target verb bias effects, however these should be then present in adults. The large variance of primability, as well as the absence of the lexical boost in children demonstrate profound discrepancies in processing mechanisms across development and require further elaboration of the two models proposed.

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