A Story a Day: Exposure to structured narratives with complex syntax enhances multilingual children's narrative macrostructure, but not complex syntax use

Multiple theoretical frameworks and numerous studies suggest that exposure to quality language input enhances children's language development (e.g., Anderson et al. 2021; Hoff et al. 2011; Huttenlocher et al., 2002; Rowe & Snow, 2020; Seidenberg & MacDonald, 2018). The majority of existing studies have examined the role of input in the development of vocabulary and syntax, but less is known about the role of input in the development of spoken narratives.

In the current study we examine the role of exposure to structured narratives and complex sentence structures in multilingual 5 and 6 year old children speaking Kannada, an understudied language of South India used by approximately 70 million speakers as a first or an additional language. Multilinguality is the norm in the Indian context. The children in the current study were recruited from a larger study that examined language and literacy in low- and middle-income countries. We address two research questions: first, whether exposure to structured narratives enhances the macrostructure of multilingual children's narratives; second, whether exposure to complex sentence structures in a narrative context enhances their use. The second question was motivated by the research on structural priming as implicit learning in adults and in language development (e.g., Chang et al., 2005; Kidd, 2012).

We developed 14 narratives that used the same story grammar: the same components (setting, characters, initiating event, problem, attempt, resolution) presented in the same sequence, motivated by previous research (e.g., Shapiro & Hudson, 1991; Silva et al., 2014). Additionally, each narrative contained 15-17 tokens of temporal adverbial clauses (Example 1). We used temporal adverbials because they serve a key function in building a coherent narrative by linking events temporally. The narratives were developed from publicly available illustrated stories aimed at children in preschool and the early grades. Children were exposed to 10 of the 14 narratives (counterbalanced across participants) over 10 sessions during consecutive school days. The exposure was implemented in a shared book reading context in small groups. In each session, the exposure phase was followed by a question and answer phase. For five consecutive sessions, the questions aimed to elicit the story grammar elements, and mid-way for the other five, the temporal adverbials. The study protocol was implemented in the context of an oral language intervention and delivered by trained research assistants. We examined the effects of exposure to the narratives by assessing the use of the story grammar elements and the temporal adverbials in the children's own narratives. Children were assessed individually using a story retelling task (using the remaining 4 narratives that had not been used in the daily sessions, counterbalanced across participants) at four test points: immediately before the start of the daily sessions, mid-way, immediately after, and four weeks after the daily sessions. We additionally examined whether the effects were modulated by the children's Kannada receptive vocabulary and grammar skills (assessed via sentence repetition), Kannada print at home, and maternal education.

Children's use of the story grammar elements was enhanced relative to before the daily sessions both at the immediately after and the four week delayed test points (Figure 1). While the overall narrative duration (in number of utterances) increased, the proportion of temporal adverbials remained constant across the test points (Figure 2). The type of question used in the exposure sessions did not influence the use of either the story grammar elements or the temporal adverbials. The use of both the story grammar elements and the temporal adverbials was predicted by the child's Kannada receptive vocabulary and grammar skills, but not by Kannada print at home or maternal education.

We will consider the implications of the findings for models of language development, and the role of implicit learning in multilingual spoken narrative and sentence structure development. We will also discuss the opportunities and challenges in psycholinguistic research in understudied languages and non-WEIRD contexts.

Example 1. Temporal adverbial clause in Kannada.

shaaleya koneya ganTe hoDedaaga, makkaLella khuShiyinda horage ooDidaru.

school-GEN last-GEN bell ring-PST-REL.PPL child-IR.PL-all happy-INST out run-PST-3H.PL

When the last bell rang, all the children ran out happily.

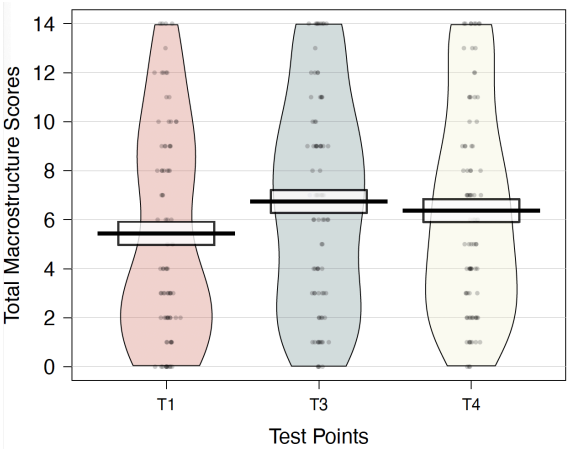
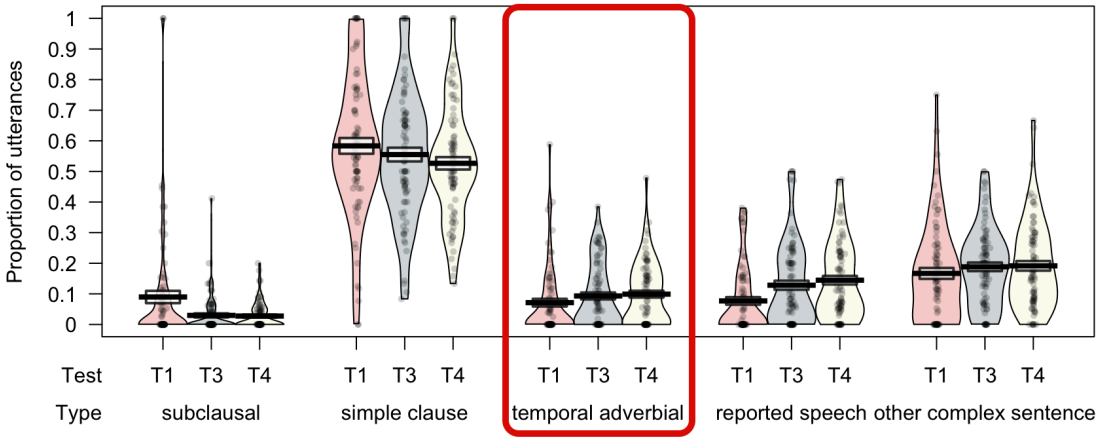


Figure 1. Macrostructure scores across three test points (T1: immediately before exposure; T3: immediately after the 10 exposure sessions; T4: 4 weeks after the 10 exposure sessions).

Outcome: total macrostructure score (max = 14)
T1 vs. T3: β = 1.47, SE = 0.42, t = 3.52 , p < .001
T1 vs. T4: β = 1.02, SE = 0.45, t = 2.24 , p = .025

Figure 2. Different types of utterances in the children's story retellings at three test points (T1: immediately before exposure; T3: immediately after the 10 exposure sessions; T4: 4 weeks after the 10 exposure sessions).

Outcome: proportion of temporal adverbial structures across test points
T1 vs. T3: β = .023, SE = .014, t = 1.68 , p = .093
T1 vs. T4: β = .028, SE = .015, t = 1.86 , p = .063



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