Abstract

Background: The ability to tell narratives in preschool years has been repeatedly associated with future academic skills in children with typical language development (TLD) and in children with Developmental Language Disorder (DLD) yet research examining the benefits of narrative intervention in both languages and its impacts are scarce.

Purpose: The purpose of the present study is to examine the impact of bilingual narrative intervention (BINARI) on macrostructure and microstructure narrative skills in Russian-Hebrew bilingual preschool children at risk for DLD and to examine how narrative skills transfer between the languages.

Method: Seventeen Russian-Hebrew bilingual children whose parents expressed concern about their language development and scored 1.25 SDs below bilingual standards on **an L2/Hebrew screening test** participated. Based on further screening of morpho-syntactic and lexical abilities in **L1/Russian**, eight were identified as children with bilingual DLD, since they performed below 1.25SDs **in both languages.** Two blocks of six intervention sessions each were conducted, first in L1/Russian and then in L2/Hebrew. Four progress monitoring (PM) sessions involving story retelling **in both languages** were administered: (1) prior to intervention in Russian and Hebrew, (2) following a block of six sessions in Russian, (3) following a block of six sessions in Hebrew and (4) follow-up test six weeks after the last intervention session in order to examine long term effects of intervention in the two languages. All narratives produced in the four progress monitoring sessions were transcribed and coded for macrostructure elements (character, problem, mental state terms, goal, attempt, outcome and internal relations) and microstructure elements (total number of words, number of different words and C-units, percentage of complex C-units, and percentage of correct C-units).

Results: A Linear Mixed Model analysis of the narratives produced at four progress monitoring sessions showed improvement of all children on macrostructure total score and on number of different words in both languages. Since macrostructure total score and number of different words increased in Hebrew following the intervention in Russian, cross-linguistic transfer is assumed. Group (DLD/TLD) differences were not found for macrostructure total score but were found for microstructure elements. Children with TLD had higher scores for total number of words ($\chi 2$=7.40, p=.01), NDW ($\chi 2$=5.97, p=.02), and percentage of complex C-units ($\chi 2$=10.57, p=.01) than children with DLD. Language differences emerged for macrostructure

total score (higher in Russian), number of different words (more in Russian), percentage of complex C-units (higher in Hebrew), and percentage of incorrect C-units (higher in Hebrew) in both groups for all PMs. For accuracy, a significant interaction emerged, where children with TLD used more incorrect C-units in L2/ Hebrew than in L1/Russian, but for children with DLD there was no significant difference between the languages. Finally, the effect of Age of Onset of Bilingualism (AoB) showed that the lower the AoB, the higher the macrostructure total score, the number of different words and the correct C-units. AoB did not impact the other microstructure measures.

Conclusions: BINARI was found to enhance narrative macrostructure skills and number of different words of bilingual preschoolers with DLD and differences between languages emerged for macrostructure skills and three microstructure measures. The theoretical contribution of this research is in considering patterns of macro-micro gains of bilingual narrative intervention and the optimal conditions for cross linguistic influence. The application of this research is in making bilingual narrative intervention protocol more accurate for educators and clinicians and in understanding the importance in assessing in both languages in order to better treat.