

The relation between reading and language in multilingual and monolingual Italian children

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As an increasing number of children learn to read in a non-native language, it is crucial to gain more insight in the relation between reading and (second) language development. The present study investigated how multilingual children compare to monolingual children in terms of their reading development, and how this relates to oral language skills. We considered three factors that have previously been found to correlate with reading, namely vocabulary knowledge (Ouellette, 2006; Verhoeven et al. 2011), phonological skills (Goswami & Bryant, 2016; Nation & Hulme, 2011) and predictive language processing (Huettig & Pickering 2019; Mani & Huettig 2014).

We tested 55 multilingual children speaking Italian as their second or third language ($M = 9;11$, $SD = 1;0$) and 38 monolingual Italian children ($M = 9;08$, $SD = 1;1$), aged eight to twelve. Standardized tests were used to assess productive vocabulary, nonword repetition, and word-, nonword- and passage reading speed and accuracy. Predictive language processing was assessed in a visual world eye-tracking experiment testing children's ability to anticipate nouns on the basis of gender- and number-marked articles ($N = 73$; 42 multilinguals and 31 monolinguals). We expected that monolingual children would outperform multilingual children in reading, and that reading abilities would be positively related to Italian vocabulary knowledge, nonword repetition and predictive processing.

A principle components analysis extracted a reading score that explained the maximum amount of variance in the data, composed of all six reading measures, with word and passage reading speed contributing most. Multiple linear regression was used to predict reading ability (i.e., the first principle component) based on group (multilinguals versus monolinguals), grade, vocabulary and nonword repetition. Reading scores were predicted by vocabulary knowledge (Est. = .057, $p = .038$), nonword repetition scores (Est. = .085, $p = .043$), and by grade (Est. = 1.50, $p = .003$), but not by group. The eye-tracking data were analyzed with generalized linear mixed models on the odds of looking at the target. We found that both monolinguals and multilinguals anticipated (Est. odds ratio = 1.13, $p < .001$), older children more so than younger children (Est. odds ratio = 1.19, $p < .001$), with no significant difference between monolinguals and multilinguals (Est. odds ratio = 1.04, $p = .266$). The prediction effect was significantly modulated by reading skills for monolingual children (Est. odds ratio = 1.15, $p < .001$) but not for multilingual children (Est. odds ratio = 1.01, $p = .581$).

Taken together, these findings suggest that reading and spoken language are interrelated, and they highlight the importance of supporting oral language skills for literacy development. More research is needed to investigate the relation between reading and predictive processing and how it may differ between multilingual and monolingual children.

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