

Eye movements and morphological processing in reading aloud derived nouns: A study with primary school children

Several studies (see Rayner, 2009) focused on the variables that influence eye-movements in reading morphologically complex words. Yan et al. (2014) provided evidence for the role of the morphological structure of words on eye-movements in reading suffixed words. However, Häikiö et al. (2011) suggested that the use of morphemic structure can be influenced by reading skills, as slow 2nd grade readers are more prone to the processing of morphemic constituents than their fast peers and older children (4th and 6th graders). In a previous study, Traficante et al. (2014) found that, in children, the access to roots that can entertain several morphological relations (e.g., Italian verbs, that have very rich inflectional families) makes the word processing more difficult; on the other hand, the access to roots that have limited morphological families (e.g., Italian nouns) does not affect the processing of the complex form. The aim of this work is to assess the role of word morphology and grammatical class of base-words on eye-movements, in young Italian readers (from 3rd to 5th grades).

Methods.

Participants. 31 children, attending 3rd to 5th grade, were recruited (mean age = 9 years; 13 M; 19 F) from a primary school in Northern Italy.

Materials and procedure. 42 nouns derived from noun-base (e.g., umorista, humorist), and 29 nouns derived from verb-base (e.g., punizione, punishment) were selected and embedded in sentences. The target word appeared in the middle of the sentence and had a low cloze probability in the used context. Participants' reading skills were assessed with standardized tests. Eye-movements were recorded by SensoMotoric Instruments RED500 system.

Results.

Linear mixed models were used to assess effects of word length, grammatical class of the base word, whole-word and base frequency, and children's reading skills. First-fixation and gaze durations were taken as measures of early and late processing, respectively, and used as dependent variables.

We found a significant interaction between base frequency and base grammatical class, as reported by Traficante et al. (2014). However, this effect only emerged when considering first fixations and not in the analysis of gaze durations. Reading skills did not interact with morphological effects.

Conclusion.

The eye-tracking data provide converging evidence in favor of the base-category modulation reported in Traficante et al. (2014). Crucially, they also indicate, in line with Yan et al.'s (2014) results, that subtle statistical aspects of the roots are captured from early stages of lexical processing, even in young readers.

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