

Literacy improves the comprehension of object relatives

Ewa Dąbrowska, Esther Pascual and Beatriz Macías Gómez-Estern

A number of studies have demonstrated that there are considerable individual differences in adult native speakers' knowledge of the grammar of their language (for reviews, see Dąbrowska 2012, 2015; Farmer, Misyak and Christiansen 2012; Hulstijn 2015; Kidd, Donnelly and Christiansen 2018). Many, though not all of these differences appear to be related to education and print exposure: speakers who have more years of schooling and/or read more tend to perform better on tasks tapping grammatical knowledge than participants who are less educated and/or read less. Notably, however, the "low-educated" or "low-literate" participants in these studies typically had 10-12 years of schooling and were fluent readers, even if they had not consumed much print since leaving school.

This raises the question of what illiterate speakers' mental grammars might be like. While a number of studies have shown that the acquisition of literacy has important repercussions for phonological representations, speech processing and even brain organization for language (for reviews, see Dąbrowska in press, Huettig 2015, Huettig and Mishra 2014), very little is known about what effects, if any, literacy might have on grammatical knowledge and representation. In this paper, we describe an experiment testing the effects of literacy on the comprehension of object relative clauses in Spanish. We decided to focus on object relatives, as this is a relatively difficult structure that is acquired late by children, making it a good candidate for a grammatical construction whose acquisition might be supported by writing.

We tested three groups of native Spanish speakers: illiterates, semi-literates and high-literates. The first two groups were recruited through an adult literacy centre in southwestern Spain. The high literates were recruited through a university of the third age in the same region. Participants were tested using a picture selection task. Each item in the test consisted of two pictures depicting a reversible transitive event (e.g. a girl kissing an old woman and an old woman kissing a girl) and a sentence containing either an object relative (*Señáleme la abuela a la que la niña besa* 'Show me the grandmother that the girl is kissing') or, in the control condition, a subject relative (*Señáleme la abuela que besa a la niña* 'Show me the grandmother that is kissing the girl'). The participants' task was to choose the picture that went with the sentence; and each participant was tested on 32 items.

As expected, all three groups performed at ceiling on the subject relatives (group means of 95% or above), indicating that the participants had understood the task, were cooperative and focused. In contrast, we observed very large differences in performance on object relatives, with the illiterate group performing at chance (52% correct) and the semi-literate group slightly above chance (65% correct). Performance in the high-literate group was much better, although not quite at ceiling (82% correct). Thus, the results appear to support the hypothesis that literacy supports the acquisition of some aspects of grammar. We conclude with some suggestions about how this might happen.

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