

Cross-writing system variations influence the course of orthographic acquisition: An eye-tracking study on bilinguals with different L1 background

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Cross-writing system variations (L1-L2 orthographic distance) have been found to influence the processing and learning of novel L2 words^[1, 2]. However, the temporal course and specific processes constrained by such influence remain unclear. The present eye-tracking study addresses this question by comparing the process of novel word acquisition in L2 (English) in two different groups of bilinguals (Chinese and Spanish). Participants' eye movements were monitored during a reading task in which novel words were embedded in stories and repeated (five exposures) in different sentences. Learning outcomes were examined online (first fixation duration, fixation durations, and total durations on novel words) and offline (immediately and on the next day), through recall with semantic cue, word recognition, lexical decision and semantic prompting tasks. Group differences emerged from the fourth exposure onwards, with a greater reduction of first fixation duration exhibited by Spanish than Chinese bilinguals. Subsequent tasks revealed no difference between groups on the first but on the second day, with Spanish bilinguals showing better consolidation of words than Chinese bilinguals, reflected in higher accuracy and shorter response latencies in these tasks. Interestingly, both groups performed similarly in the semantic prompting task on both days. The present results extend previous findings showing the influence of L1 orthographic background on L2 word learning processes. Particularly, the exposure-by-exposure in-depth analysis of eye movements indicates that cross-writing system variations occur over the extraction of orthographic rather than semantic features, thus hindering the formation, consolidation and access of orthographic representations in those bilinguals with distant L1-L2.