Lexical access in auditory and visual word recognition: An eye tracking study with monolingual and bilingual children

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Previous research has shown that bilingual adults activate both their lexical systems simultaneously during tasks where they had to choose between lexical items that were phonologically similar (Marian and Spivey (2003), Blumenfeld and Marian (2007)). In particular, both within as well as across language competition affected their lexical access (Marian, Blumenfeld, & Boukrina, 2008) but varied according to the number of phonologically similar items (neighbourhood density) as well as task demand.

The present study addresses the questions a) whether within as well as across languages effects can also be observed in bilingual school-age children and b) how the mode of presentation (auditory vs visual) affects their lexical access.

Subjects for the study include 26 monolingual English and 26 bilingual German-English children of primary school age (6 – 8) living in the UK. Half of the children were assigned to the auditory and half to the visual presentation mode. They were first asked to name pictures of the target items and their reaction time as well as accuracy were measured (Task 1). They were then given a visual world paradigm (Task 2) where they were presented with 32 arrays of four pictures and either a spoken or a written word. Target words overlapped in phonological form with a competitor either within or across languages. Eye fixations were measured using a mobile eye tracker (SMI Red 250).

The results for Task 1 show that the monolingual children were faster and more accurate than the bilinguals. The results of Task 2 show that monolinguals and bilinguals were affected by within-language competition for low density targets, though to a lesser extent in the visual presentation mode. As expected, only the bilingual children were affected by cross-language similarity. The results confirm simultaneous lexical activation for bilingual children and show differences between presentation modes.
