

## ESR 13. Orthographic learning by self-teaching in children with hearing impairment: focus on the nature of spelling errors

Elodie Sabatier, Jacqueline Leybaert, & Fabienne Chetail

Laboratoire Cognition Langage et Développement, Université Libre de Bruxelles (ULB), Belgium

[elodie.sabatier@ulb.be](mailto:elodie.sabatier@ulb.be)

Phonological decoding when reading new words plays a predominant role in orthographic learning. This finding has recently been reported in children with hearing impairment through a self-teaching paradigm. The purpose of the current study was to use this paradigm to investigate the development of new orthographic representations in 7-13 years-old children with hearing loss (HL) compared to typically hearing (TH) controls. In addition, we examined the nature of spelling errors during written production of novel words since it gives information about the nature of orthographic representations stored in memory. The participants were 29 children with hearing impairment and 29 controls matched on accuracy and reaction time in a lexical decision task. First, they were asked to read short stories in which a target new word (pseudowords) appeared three times (implicit learning phase). Then, orthographic learning was evaluated using a spelling task and an orthographic choice task. In the latter task, the 10 target items (e.g. *karmol*) were associated with three distractors (phonological distractor: *carmole*; orthographic distractor: *kamrol*; foil distractor: *camrole*). The experiment was carried out online due to Covid-19 restrictions. Overall, both groups of children performed poorly in the spelling task (around 11-13% of new words correctly spelled), but HL children turned out to be better than TH children in the orthographic choice task. Regarding spelling errors, children with HL produced more phonological unplausible errors (e.g., *carbone* for *karmol*: different phonological form) compared to the control group, for which 73% of their productions were homophones of the target word (e.g., *carmole*). These findings suggested that children with HL exhibit difficulties to access the accurate phonological form of the word. Finally, the results were consistent with the self-teaching hypothesis regarding the ability of children to acquire orthographic representations through reading. Furthermore, the tendency of children with HL to choose the orthographic distractor more frequently than TH children in the orthographic choice task suggests that visual cues might be more involved in spelling acquisition in children with HL.