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Effects of age of acquisition (AoA) and proficiency on processing of syntax in 6- to 8-year old monolingual and bilingual children: an ERP study.

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Even though language proficiency in children is strongly related to success in almost all domains, neurocognitive studies of L2 processing are typically limited to adults with several years of exposure, who may use general cognitive mechanisms to compensate for any difficulties in L2 processing. For example, whereas previous studies of adult bilinguals have reported differences in the anterior negativity elicited by syntactic violations with delays in exposure to English of less than 3 years (Weber-Fox & Neville, 1996) a precursor to the anterior negativity has been reported in monolingual children as young as 2.5 years of age (Oberecker, et al., 2005). In the current ERP study, processing of English phrase structure was explored in 6- to 8-year old monolingual and bilingual children who acquired English as a second language around 4 years of age. Monolingual children of higher proficiency displayed relatively mature processing of phrase structure violations as indicated by a left anterior negativity over lateral sites and a posterior positivity. High-proficiency bilingual children tended to display a medial anterior negativity and a posterior positivity. The difference in distribution of the anterior effect across groups could only be explained by AoA. However, lower proficiency affected the posterior ERP effect and amplitude of the anterior effects in response to syntactic violations. These results suggest that the more automatic syntactic processing in children is affected by AoA while more controlled, metalinguistic processing may be related to language proficiency.