

Neurological correlates of conflict resolution during sentence processing in bilinguals and monolinguals: Evidence from ERP

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Bilinguals have been shown to perform better than monolinguals in executive function tasks involving conflict (for a review, see Bialystok, 2001). These findings have been attributed to bilinguals' need to switch constantly between their two languages and inhibit interference from the other language. Frequent recruitment of these processes forces bilinguals to develop executive function skills differently than monolinguals. Research with children has shown that bilinguals performed better than monolinguals in a grammaticality judgment task that required a high degree of cognitive control (Bialystok 1986, 1988; Cromdal, 1999). Moreover, Osterhout et al. (in press) showed that N400 and P600 ERPs components are modulated by the experience of learning a second language. Here, we recorded ERPs in 28 young adults who were either English monolingual or English-Hebrew bilingual while they performed either a semantic or a syntactic judgment task. Consistent with the results from the behavioural studies with children, we found a reduced N400 and P600 amplitude effect in conditions that required a higher amount of cognitive control for bilinguals. The results are interpreted in terms of the greater cognitive control by the bilinguals.