Maturational Constraints on Second Language Competence of Syntactic Processing: Evidence from Event-Related Brain Potentials (ERPs)

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Abstract

Within the debate on maturational constraints on second language acquisition (SLA) it is widely accepted that age 6 is crucial in order to differentiate between early and late SLA, in that only within the period of early SLA a natural course of second language (L2) development and the ultimate stage of native L2 competence is guaranteed [2]. According to late SLA, the processing of the L2 claims higher processing demands due to higher capacity loads. Especially syntactic L2 processing is assumed to be affected by maturational constraints [1]. Hence, recently assumptions have been made that the crucial phase for L2 development starts as early as of age 3 [3]. In this study I investigated to what extend syntactic processing of an L2 is affected by maturational constraints when exposure to L2 started later than age 3 (but earlier than age 7), a period that is referred to as child second language acquisition. Participants were Polish/German bilinguals, who started to acquire German at different points during development: 2L1 = simultaneous acquisition (age 0-3), cL2 = child second language acquisition (age 4-6) and lL2 = late second language acquisition (>age 6). Behavioural responses and event-related potentials (ERPs) were obtained as the participants read German sentences containing a syntactic violation (accusative case marking on the direct object) and their syntactic controls. Data analysis revealed different results for behavioural and ERP responses. As for behavioural data, no differences in accuracy rates and reaction times were found between the groups of cL2 and 2L1. These results rather indicate a traditional effect of maturational constraints on L2 acquisition, since the lL2 group showed significantly lower accuracy rates and slower reaction times [2]. In contrast, ERPs seem to be affected by language exposure delays as early as for the phase of cL2. Processing patterns were different compared to those of the 2L1 group but resembled the pattern as elicited by the lL2 group. These results suggest that syntactic processing of a second language seems to be affected by maturational constraints in that demands on processing capacities are already increased when exposure to the L2 started later than age 3. That behavioural reactions on syntactic processing do not seem to be affected by maturational constraints when exposed to the L2 between age 4-6 might be due to the strength of the syntactic violation investigated.