

Attentional control and sublexical speech perception in bilingual adults with developmental stuttering

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Background - Several hypotheses regarding developmental stuttering link atypical disfluencies to hypersensitivity to subtle errors in speech production. This suggests that stuttering may be considered in part a perception problem. It is unclear whether this putative hypersensitivity is due to domain-specific problems at the level of phonological processing or to cross-domain, unbalanced attentional allocation. In addition, studies tend to focus on monolinguals, whereas both stuttering and multilingualism seem to have implications for auditory perception and attentional control.

Consequently, this study examined whether (1) sublexical speech perception and non-linguistic attentional control differ between bilingual adults who stutter (BDS) and do not stutter (BNS) and (2) whether second language (L2) fluency influences these processes.

Method - Thirteen BDS and thirteen BNS were presented with a pre-attentive (MMN) and attentive auditory oddball paradigm (P300) containing a phonemic contrast. The Attention Network Test was administered as a behavioral measure of attentional control.

Results & Discussion - (1) The MMN and P300 event-related potentials did not differ between BDS and BNS, but correlation analyses showed linear relationships between stutter frequency and severity as well as the P300. Behaviorally, BDS showed less efficient executive attention than BNS. (2) No significant effect of L2 language ability was retained. These results suggest that BDS experience difficulties with inhibition of irrelevant and selection of relevant information, rather than maintaining an alert state or selecting information from sensory input.