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An investigation into the relationship between bilingualism and attentional networks with a focus on linguistic distance and language proficiency.

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Abstract

Continuous control of two languages during speech production may result in a 'bilingual advantage', where highly proficient bilinguals outperform monolinguals on nonverbal cognitive tasks. Greater linguistic distance between two bilingual languages is expected to influence this relationship, where bilinguals who engage with similar languages develop enhanced inhibitory control. To address this issue, this study examined reaction times and correct response rates on the attentional network task (ANT) and the Simon Task, where three different attentional networks (alerting, orienting and executive control) were examined. Two bilingual groups (English-German and English-Chinese) and one monolingual group (English) completed these attentional tasks as well as a Language Experience and Proficiency Questionnaire (LEAP-Q). Results did not provide unequivocal support for the 'bilingual advantage' hypothesis, which was only demonstrated by superior performance of bilinguals on the congruent and incongruent trials of the Simon Task. The Simon effect did not differ significantly between bilingual and monolingual participants, and no significant differences were revealed by performance on the ANT. The findings of this study also suggest that the effects of linguistic distance on cognitive functioning may not be quantitative in nature and should be investigated using neuroimaging techniques.