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Novel Word Learning and Executive Function in Active and Inactive Bilinguals

Abstract:

The relationship between bilingualism and cognition has been studied extensively over the years with a great deal of literature both in support of and challenging the idea of a bilingual advantage. However the effect of language use on the bilingual advantage has not been commonly studied and has been suspected to be a confounding variable in bilingualism research. Previous studies have reported bilingual participants demonstrating faster reaction times (RT) and greater accuracy than monolinguals in tasks that test inhibition and task switching (e.g. de Bruin, Bak & Della Salla, 2015). Previous studies have also found an advantage for bilinguals in further language learning in which bilinguals outperformed monolingual participants by accurately recalling more novel words after a brief learning period (e.g. Kan, Sadagopan, Janich & Andrade, 2014). For this study, we wanted to examine the effect of language usage and switching between languages on executive functioning and novel word learning. If regular language use and switching (e.g. daily use) does have an effect on cognition, we predicted that participants who regularly switched between languages would demonstrate faster RT and accuracy when compared with other participants. Participants were divided into three groups, monolinguals, inactive bilinguals (bilinguals who regularly use only one language), and active bilinguals (bilinguals who regularly use more than one language), and were compared on their performance on executive function and novel word learning tasks to determine whether there is an effect of active language use. Contrary to our predictions, the monolingual group demonstrated significantly faster RT than the active bilingual group on the Simon task (F(2, 58) = 4.50, p < .05, ηp² = .134). We found no significant differences between groups' RT and accuracy in the ANT (Attentional Network Task), card sort, and novel word learning tasks. No evidence supporting a bilingual advantage as a result of language use was found in the Simon, ANT, card sort, or novel word learning tasks. Conversely, active language use can result in a disadvantage in inhibitory processing in young adult bilinguals. It is possible that active language use may exhaust cognitive resources, thereby increasing RT.