

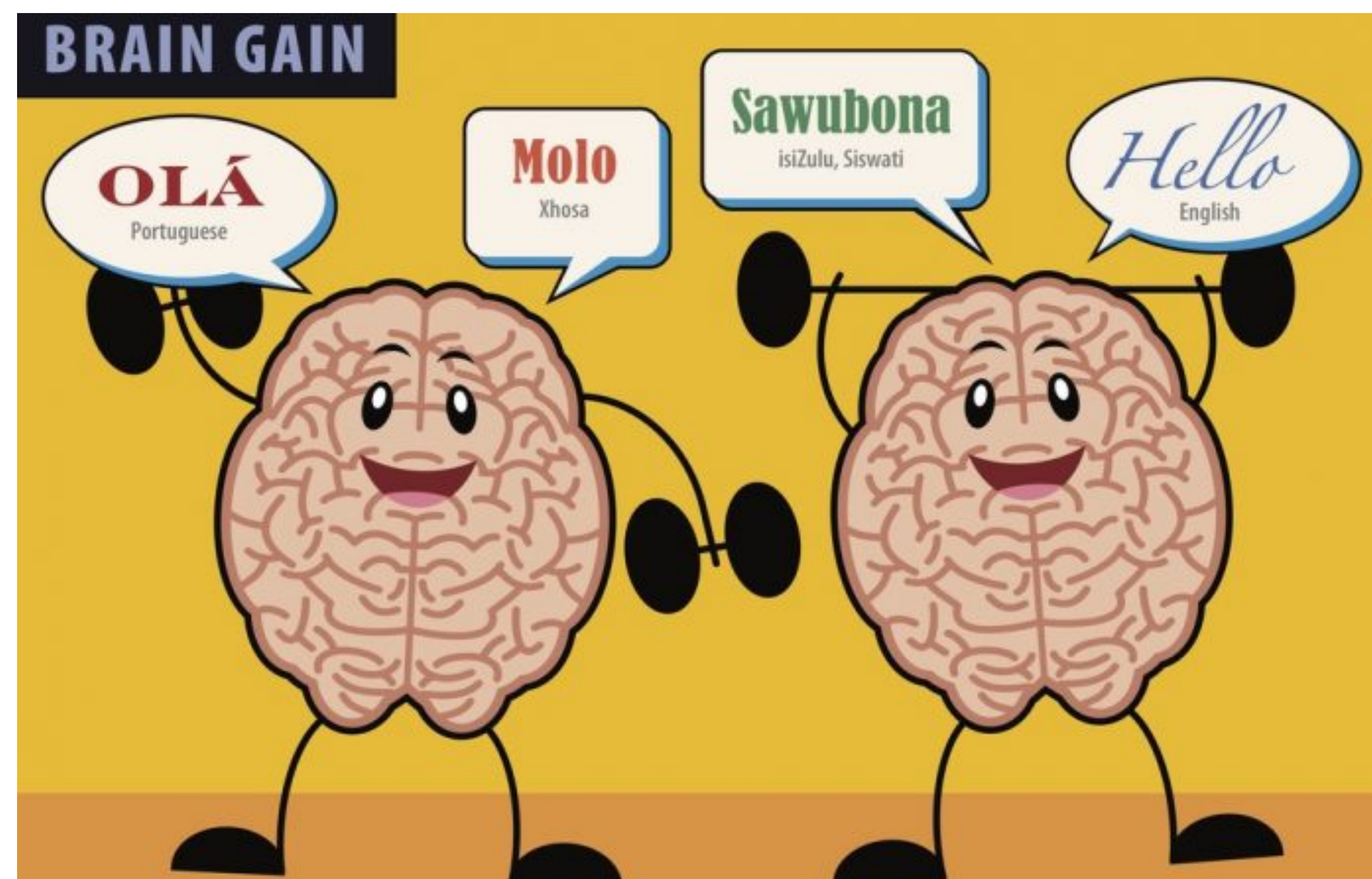
WP The Impact of Stroop Task in Monolingual and Bilingual College Students WP

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Introduction

- Research has shown that bilinguals have an advantage in executive functions (Bialystok et al., 2014).
- Bilingual speakers need not only to decode the message they want to convey but they also need, in contrast to monolinguals, to do so in the appropriate language for each situation (Barac & Bialystok, 2012).
- Overall, there is significant research in the impact of bilingualism on the executive control system in children and old adults, children not having a fully developed system while adults have an already decaying one (Bialystok et al., 2014).

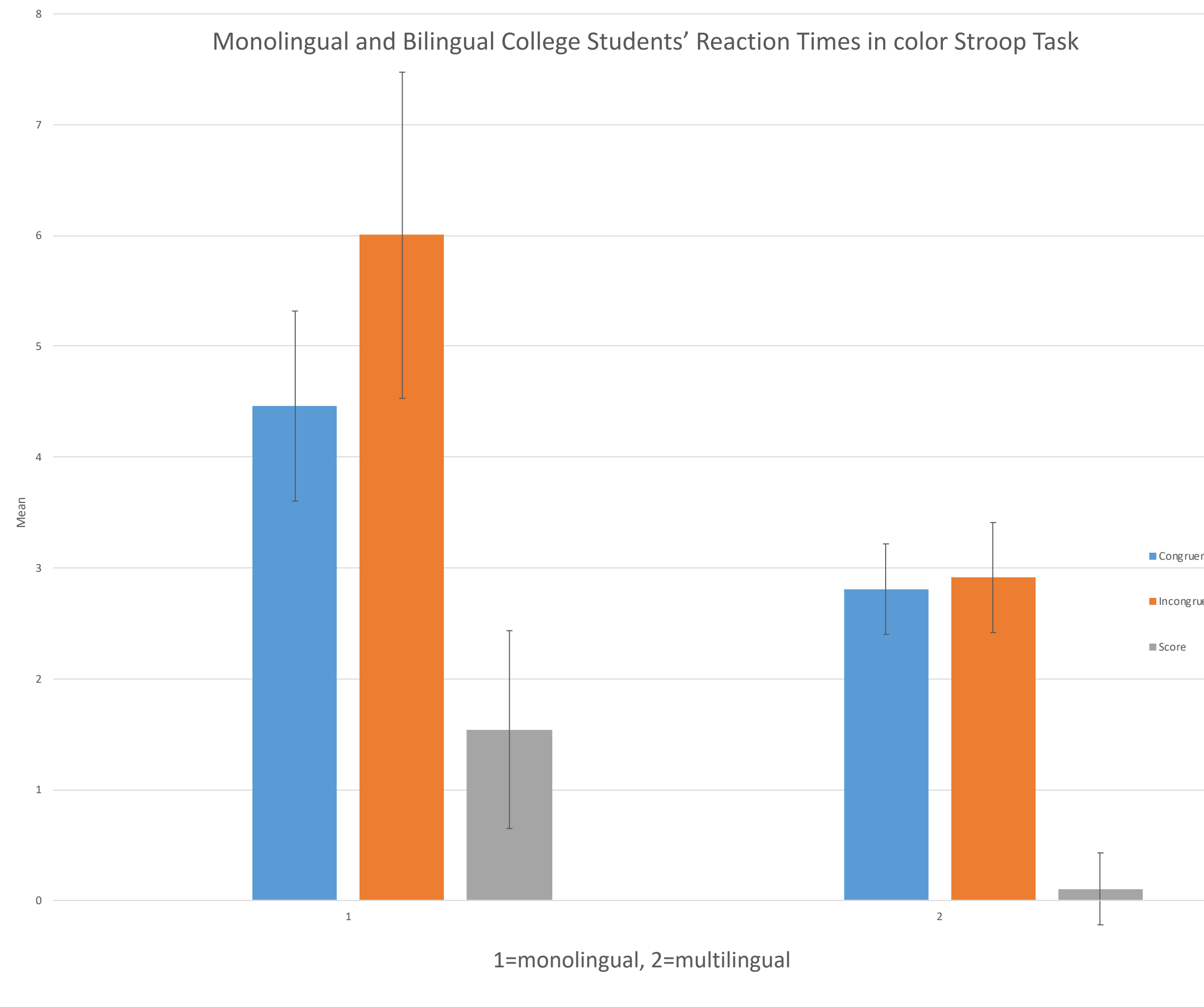
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Methods

Participants

- Thirty-seven monolingual and forty-four bilingual college students were recruited through e-mail and social media in this study.



Procedure

- Participants were asked to fill out an online survey through Qualtrics.
- Questions from Bialystok's Language and Social Background Questionnaire assessing the participants' language background
- After these set of questions, 10 congruent trials and 10 incongruent trials of the color Stroop Task were administered, and reaction times were recorded.

Results

- Results showed that bilingual college students were significantly faster than the monolingual college students in the color Stroop Task for both congruent ($t(79)=3.12, p<.01$) and the incongruent ($t(78)=4.27, p<.01$) trials.
- Monolingual students showed the Stroop effect in slower responding on the incongruent trials ($t(36)=-3.50, p<.01$).
- Bilingual students showed no difference between congruent and incongruent trials.



Discussion

- Results indicate that the bilingual students responded faster on the Stroop Task overall and also did not show the cost of inhibiting reading on the incongruent trials.
- The current findings fit in with the research that has shown that being bilingual is a huge benefit because it allows people to work globally, increases job opportunities, and it opens the doors to a new culture.
- Through the color Stroop Task, we can see that bilingual college students have an advantage on this executive function measure.
- Most studies in this topic include young children or older people, this study shows the advantage of executive function in bilingual college-aged students.



References

- Barac, R., & Bialystok, E. (2012). Bilingual effects on cognitive and linguistic development: role of language, cultural background, and education. *Child Development*, 83, 413-422.
- Bialystok, E., Craik, F., Grady, C., Chau, W., Ishii, R., Gunji, A., & Pantev, C. (2005). Effect of bilingualism on cognitive control in the simon task: evidence from MEG. *NeuroImage*, 24, 40-49.
- Bialystok, E., Poarch, G., Luo, L., & Craik, F. (2014). Effects of bilingualism and aging on executive function and working memory. *Psychology and Aging*, 29, 696-705.
- Carlson, S., & Meltzoff, A. (2008). Bilingual experience and executive functioning in young children. *Developmental Science*, 11, 282-298.
- Pelham, S., & Abrams, L. (2014). Cognitive advantages and disadvantages in early and late bilinguals. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 29, 313-325.
- Tzelgov, J., Henik, A., & Leiser, D. (1990). Controlling stroop interference: evidence from a bilingual task. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 16, 760-771.