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INTRODUCTION

- Many studies that examine the bilingual advantage find that bilinguals perform better on tasks that involve executive function abilities (e.g., task-switching, inhibition) relative to monolinguals (Bonifacci et al., 2011; van den Noort et al., 2019).
- However, a number of studies have found no significant differences in executive performance between bilinguals and monolinguals (Paap et al., 2015; Lehtonen et al., 2018).
- Recently, studies have suggested that this advantage stems from other factors and not bilingualism per se (Antón et al., 2019): Socioeconomic status, culture, language experience, and experience doing other activities that could improve cognitive function abilities (e.g. playing video games).

Study Objective

To examine executive function performance among groups of bilinguals and monolinguals that are less likely to be socioeconomically and culturally different: French-English bilinguals and English-speaking monolinguals born in Canada.

PARTICIPANTS

- 30 French-English bilingual young adults native to Canada
- 30 monolingual young adults native to Canada
- aged 13-35

Inclusion criteria

- No traumatic head injury
- No learning disability
- No uncontrolled anxiety or depression
- In possession of a working laptop or desktop computer, keyboard and mouse to do study online and able to read words on a computer screen and provide responses by pressing keys

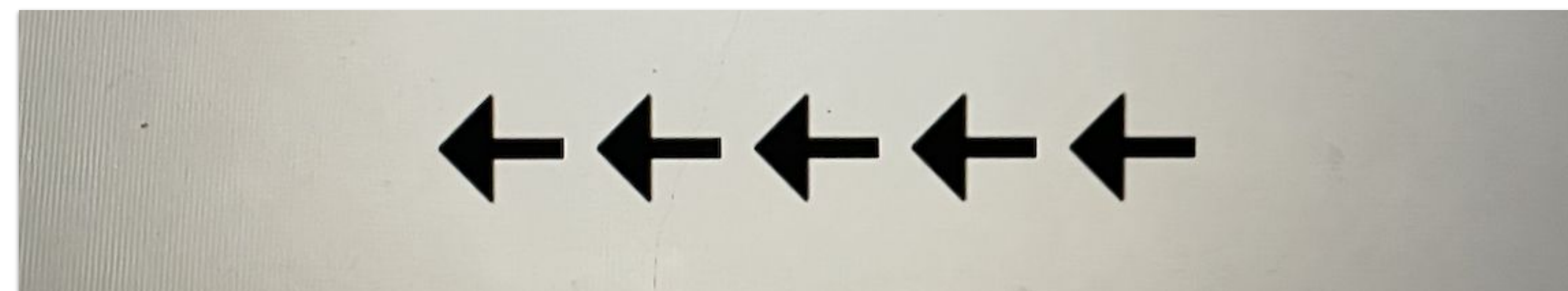
METHODS

Testing Procedure

- Participants will complete:
 - Morningness/Eveningness Questionnaire
 - Bilingual Language Profile Questionnaire
 - Language and Social Background Questionnaire
 - Online Flanker Task
 - Online Stroop Task

Online Flanker task

- Participants will be presented with a blank screen with a row of five arrows in black ink and the center arrow will point towards either the left or right direction
- Participants will have to ignore the direction of the outer-arrows and indicate the direction in which the center arrow is facing by clicking the left or right arrow-keys



In this example, the correct response is to click the left arrow-key since the center arrow is pointing towards the left.

Online Stroop Task

- Participants will be presented with a blank screen with three colours written out
- The words on the left and right will be written in a black ink, while the center word will be written in the ink of either of the written colours on the sides
- Participants will have to ignore the word and indicate the ink colour by clicking on the left or right arrow-keys that represent two colour options



In this example, the correct response is to click the right arrow-key since the ink of the center word is green; the option on the right.

METHODS (cont.)

- The Morningness/Eveningness Questionnaire: determines the participants’ peak alertness time, in order to indicate the best time to complete the Flanker and Stroop tasks.
- The Bilingual Language Profile Questionnaire: determines the participants’ language use, history, attitudes and proficiency.
- The Language and Social Background Questionnaire: determines socioeconomic status, language proficiency and use, and other factors that could affect executive function abilities.
- Online Flanker Task: a response inhibition test that assesses the participants’s abilities in spatial interference resolution and resistance.
- Online Stroop Task: a response inhibition test that assesses the participants’s abilities in verbal interference resolution and resistance.

DISCUSSION

- Bilingualism is inherently enriching and provides a myriad of cultural, personal, and educational benefits for individuals.
- However, it is crucial that the bilingualism advantage be better understood in order to effectively guide pedagogy and policy.
- More research is required to determine when and why a bilingualism advantage in cognition arises.

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