

# THE BAIT AND SWITCH: DIFFERENCES IN SHIFTING ATTENTION BETWEEN MONOLINGUALS AND BILINGUALS

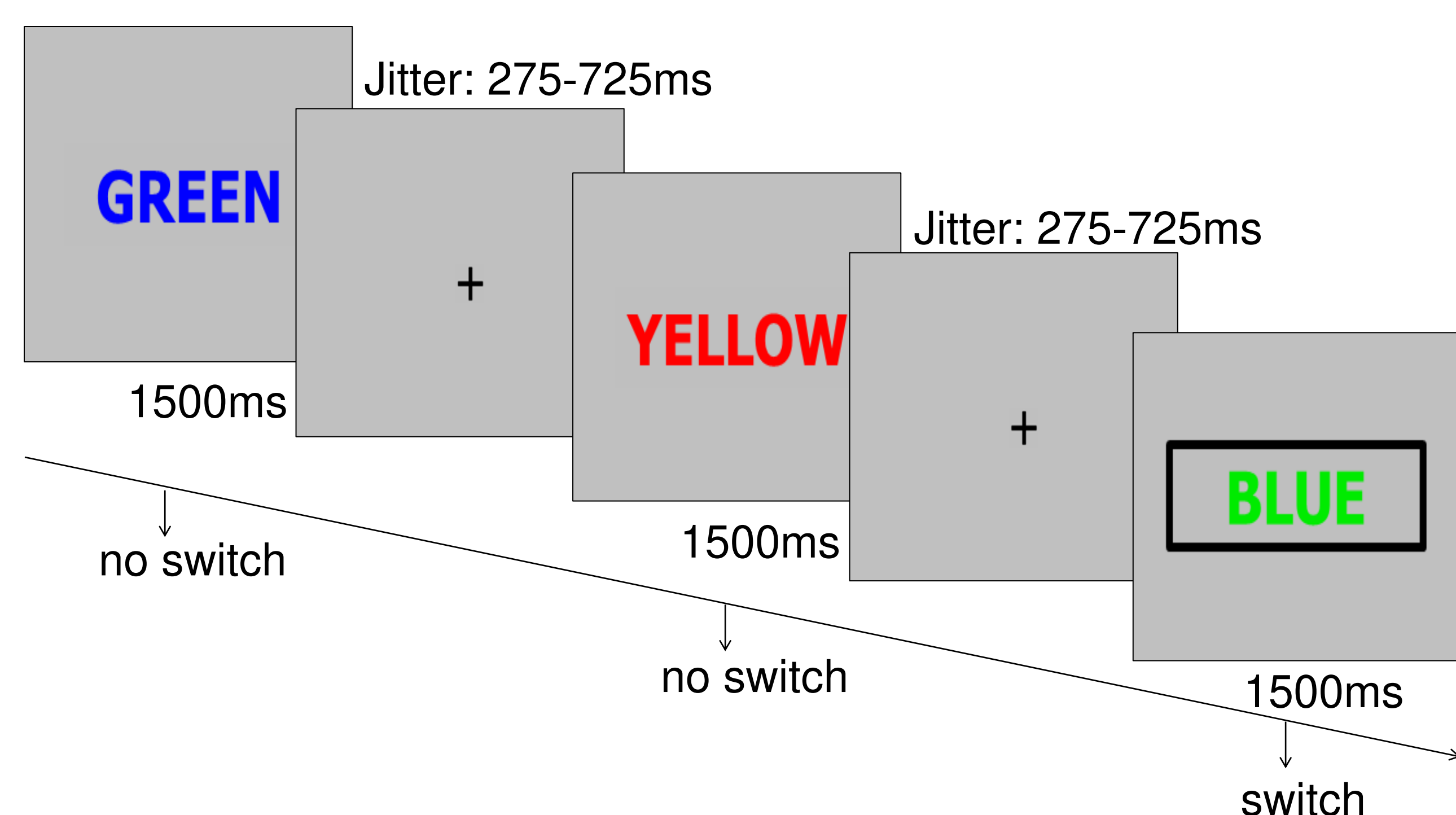
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## Introduction

- Recent theories of bilingualism suggest that speaking two languages fluently may improve Executive Function (EF) because bilingual individuals are accustomed to shifting between language systems (Bialystok, 2009; Bialystok, Craik & Luk, 2008; Carlson & Meltzoff, 2008).
- There is some debate as to whether the bilingual advantage is replicable (Konnikova, 2015), with a recent study revealing that bilinguals are not more efficient at shifting, but instead better at sustaining attention within a particular task (Weissberger, Gollan, Bondi, Clark, & Wierenga, 2015).
- Primary Aim:** The present study examined whether bilinguals show cognitive and neural advantages in shifting as measured via the frontocentral P2 event-related potential during a task requiring set shifting.

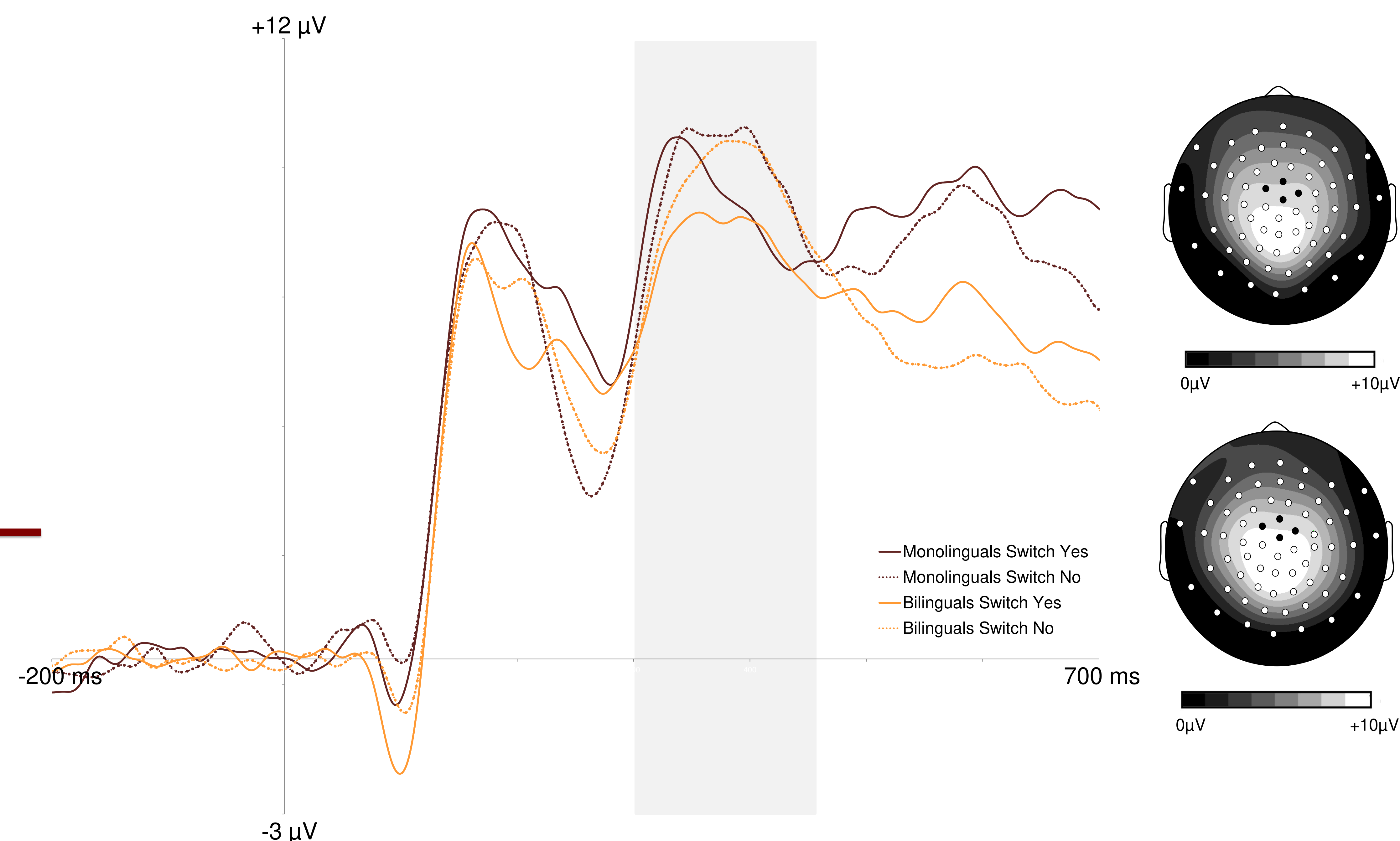
## Method

- Monolingual English ( $n = 19$ ) and Spanish-English bilingual ( $n = 51$ ) undergraduate participants were recruited from Loyola University Chicago.
- Reading Span Task.** To measure working memory.
- Shifting Color-Word Stroop Task (Delis, Kaplan, & Kramer, 2001).** 144 shifting trials, 4 blocks of 36 trials, 50% of trials require shifting.
- Data Reduction.** A 64-channel cap with BioSemi active electrodes was used. Stimulus-locked event-related potentials (ERPs) were averaged for the P2 (300-450ms).



## Results

- Bilinguals had longer reaction times (RT) than monolinguals on shifting trials ( $p < .001$ ).
- Bilinguals had later frontocentral P2 latencies compared to monolinguals on switching trials ( $p < .05$ ).
- P2 latencies were positively correlated with RTs on switching trials ( $r = .42, p < .001$ ).



## Discussion

- Bilinguals' later P2 latency and subsequent longer RT during shifting trials suggest that switching may be more effortful for bilinguals.
- Bilinguals may be less able to disengage from the linguistic nature of the Stroop task.
- Consistent with recent literature, our findings suggest that shifting may be less efficient for bilinguals (e.g., Konnikova, 2015; Weissberger et al., 2015).
- Future studies should incorporate a non-verbal shifting task and include more diverse language groups.