

INHIBITORY CONTROL IN BILINGUALS: TESTING THE ADAPTIVE CONTROL HYPOTHESIS

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The Adaptive Control Hypothesis (Green & Abutalebi, 2013) connects 'bilingual advantage' with interactional contexts of bilinguals. As per the theory, there are three possible interactional contexts in terms of language switching patterns of bilinguals: the Single language context (SLC), the Dual language context (DLC) and the Dense code-switching contexts (DCS), out of which Dual language context trains the cognitive control mechanism the most, thereby predicting a spill-over effect. The current study tests this claim in the context of India, and its young generation. A series of three experiments were carried out on bilingual participants, who differed in terms of their interactional contexts. A questionnaire adapted from (Hartanto & Yang, 2020) was used to categorize the participants as belonging to one of the three interactional context groups, followed by a series of three experiments, representing a particular aspect of domain general cognitive control: the inhibitory control. The experiments were: Simon, Stroop and Go/No Go task.

In the Simon task, the participants (N= 61; SLC:21, DLC: 19, DCS: 21) age range: 18-35 years (m= 28.90, SD= 3.45) responded to the given stimulus, ignoring its position on the screen. The hypothesis was that the Dual language context group would outperform the Single and Dense code-switching groups in this task requiring inhibitory control. Results however, showed that the Single language context group outperformed the other two groups in this task.

In order to investigate the matter further, the next experiments enlisted a larger group (N= 107; SLC: 47, DLC: 31, DCS: 29) of young adults, narrowing the age bracket (age range: 18-25, m= 19.45, SD= 1.26), They took part in two different inhibitory control tasks. The first was the classic Stroop task, where the participants had to ignore the word displayed on the screen and focus instead on the colour of the text. The second task was the Go/No-go task, in which the participant has to respond to one stimulus and refrain from responding to the other stimulus. Analysis shows that the participants of the Dense code-switching group outperformed the Single and the Dual language context groups in these two inhibitory control tasks.

The results in all three experiments failed to prove the hypothesis. The dual code switching group did not perform better than the other two groups. Though this is an ongoing study and further analysis are underway, the results point to further nuances in the 'bilingual experience' that probably needs attention. This study focussed on young adults, who are engineering students of a premier institute of India (IIT). Factors like intelligence, education, SES were controlled and thus can be excluded as confounding variables. Hence, more factors, alongside the language switching practice, probably are at play and that needs further investigation.