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Inhibitory control and Code-switching Frequency and Directionality in Algerian Multilinguals: A Pilot study

Multilingualism engages executive functions, but the definite depths and effects of how specific code-switching relates to code-switching remain an area of interest. In particular, inhibition, a core component of cognitive control, may modulate the frequency and directionality of code-switching. Adjacently, most code-switching studies rely on self-reporting as a main data collection tool; the latter has been the subject of concerns on ecological validity due to high chances of bias and a failure of proper self-reflection. Accordingly, this pilot study relies on an empirical approach to examine whether individual differences in inhibition predict code-switching behavior in Algerian multilinguals, where Arabic, French, and English coexist in daily communication, and how the linguistic distance of those languages may correlate differently with inhibitory control. Ten Algerian university students (n=10), all multilinguals, completed proficiency assessments for French and English (TV5 MONDE and EF SET, respectively) and the Bilingual Language Profile (BLP) with added demographic items. All participants were regular users of Arabic (specifically the Algerian dialect), French, and English, with normal hearing and no reported language or neurological disorders. Inhibition was measured using an Eriksen Flanker task (20 practical trials, 100 experimental trials). Code-switching was elicited through speech elicitation of the *Frog, Where are you?* Picture-based story, covering six language directions (e.g., Arabic -> French, Arabic-> English) Narratives were audio-recorded, and switches quantified per narrative were normalized per 100 words to control for speech length. Data analysis will include descriptive statistics, Pearson correlation and repeated-measures ANOVA (conducted using SPSS 22) to compare switch frequency across directions. Preliminary results are expected to show participants with weaker inhibitory control produced more frequent and varied switches. These findings will enrich the literature linking inhibitory control to pseudo-spontaneous code-switching in Algerian multilinguals and potentially highlight the important of including underrepresented populations in larger psycholinguistic studies. Overall, this pilot establishes a methodological framework for larger-scale future studies.

Keywords: Code-switching, Inhibitory control, Narrative elicitation, Algerian Multilingualism, Language directionality

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