Abstract

Cognitive control is the ability to flexibly adapt behaviour to current demands by promoting task-relevant information in the face of interference or competition (Dreher and Berman, 2002). It is well established; that bilingualism is considered as an added advantage with respect to cognitive control (Bialystok et al, 2005). Language control in its simplest form consists of sub-components such as selection, inhibition, and switching. Some form of a system is required to enable the working of these sub components for maximizing performance in a particular language and for minimizing the interference from the other languages. Present study aimed to examine the sub-components of cognitive control (selection and inhibition) as they interact with bilingualism by using converging methodologies. Effect of language proficiency (using a detailed objective assessment) on the component processes of cognitive control among bilingual adults was also examined. Behavioural and ERP studies showed significant selection and inhibition effects varying across the two languages. Further, a case study approach with bilingual aphasia was employed in order to investigate whether cognitive control and language control are two separate systems. Results demonstrate that control processes such as selection, inhibition and monitoring particularly sustained inhibitory control may serve as the underlying resource systems for bilingual language control in representing and using the languages as a function of parallel recovery among individuals with bilingual aphasia. Overall, results of the present study highlight the significant contribution of selection (cueing paradigm) and inhibition (negative priming paradigm-ERP study) in bilingual language processing, which is predicted by language proficiency and which play a significant role in language control and get transferred to general purpose cognitive control. The extent to which the language control mechanisms overlap with general purpose cognitive control may be influenced by factors like language proficiency in bilingual individuals.