REEXAMINATION OF THE INTERHEMISPHERIC TRANSFER HYPOTHESIS OF SWITCHING (ITS)

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Previous studies have suggested that switching to a new activity requires both inhibition/stoping (suberved by the right frontal lobe) and initiation (suberved by the left frontal lobe). As a result, switching from a right- to a left-hemisphere activity has been found to be faster than switching in the opposite direction, presumably due to lesser demands on interhemispheric transfer (ITS: Suchy et al., 2003, 2004). The purpose of this study was to test this hypothesis. Four switching tasks were administered to a group of right handed college students ages 18 to 29. Participants were required to switch between right and left-hemisphere activities: (1) visual-spatial classifications (right-hemisphere) and word classifications (left-hemisphere), (2) local (left-hemisphere) and global (right-hemisphere) classifications, as well as spatial (right-hemisphere) and numeric (left-hemisphere) classifications, and (3) emotionally charged approach (left-hemisphere) and withdraw (right-hemisphere) images. Left- and right-hemisphere activities were equally difficult in each task. Administration of four different tasks allowed controlling for four confounds: (a) task difficulty, (b) set maintenance demands, (c) presence vs. absence of local/global stimulus characteristics, and (d) dependence on verbal processes. Repeated measures analysis of variance using switch direction (right to left vs. left to right) as a within-subjects factor and task as a between-subjects factor showed a main effect of switch direction, $F(1,28)=4.28$, $p=.049$, with right to left switches being faster. No main effect of stimulus manipulation and no interactions were found. The results provide support for the Interhemispheric Transfer Hypothesis of Switching (ITS) and demonstrate that the ITS effect is not specific to stimulus type or local/global components of the task. Absence of interactions suggests that confounding variables, such as task difficulty, set maintenance, verbal dependence, or whether the stimuli are presented in a local-global format, did not contribute to the ITS effect. Future research should examine the ITS hypothesis with populations known to have interhemispheric transfer difficulties, such as MS patients.