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The Role of Handedness in the Perception of Hierarchical Stimuli in Specific Hemifields: Comparison Across Readers and Non-Readers

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Abstract

Perceptual processing incorporates perception at two levels, namely the global and the local level. The global precedence effect refers to the perceptual process that causes global features of a visual scene to be perceived first when compared to the local features. The objective of the study was to assess the effects of both handedness and reading ability on the global/local processing of stimuli. The sample was divided into four groups on the basis of degree of handedness and reading ability, the groups being strongly right-handed readers, strongly right-handed non-readers, strongly left-handed readers and strongly left-handed non-readers. The sample consisted of 94 participants, from India, from the age range of 18-30, with comparable representation of male (N=43) and female participants (N=51). The psytoolkit version of the Navon task was used for the study. The results showed higher errors for the global processing of stimuli. However, when the stimuli was in the left hemifield, there was a higher incidence of errors for processing the local features of the stimuli. Additionally, left handed non-readers performed significantly worse in the Navon task than the other groups. Significant gender differences were also seen with women being slower while processing the global features of the stimuli, in both the left and right hemifields, when compared to men.

Keywords: Global Processing, Left-Handed, Local Processing, Reading Ability, Right-Handed