The Effect of Perceptual Load on the Processing of a Distracting Schematic Face

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Faces are special as they can be processed with higher priority compared to the non-face objects. Even when faces are presented as distractors, they are automatically processed to influence response selection. However, an earlier study (Bindemann, Burton, & Jenkins, 2005) showed that a distracting face was not processed to influence response selection when a face categorization task was performed. To solve this contradiction, this study investigated whether a salient distracting face is processed when participants were required to search for a face among five non-targets and judge its emotionality (Experiments 1, 2, and 4) or identity (Experiment 3). Response compatibility between target and distractor faces was manipulated to examine whether the distractor is processed. Results showed that when non-targets were five identical yellow circles (Experiments 1 and 2) and neutral faces (Experiments 1 and 3), the compatibility effect was observed (higher accuracy or faster response time in the compatible condition than in the incompatible condition); in contrast, when the non-target faces were upright (Experiments 2, 3, and 4) and inverted heterogeneous faces (Experiment 4), the compatibility effect was eliminated. These results suggested that perceptual load can modulate the processing of a distracting face. In a low-load condition, the distracting face is processed, while in a high-load condition the distracting face is not processed to influence response selection. The results are consistent with the proposals from both perceptual load theory and the attentional window perspective.

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