

The Effect of Types of Preview and Luminance on Preview Benefit in Reading

Abstract

During natural reading, the parafoveal preview of upcoming words can facilitate word recognition and allow faster reading speed. Previous studies have shown preview benefit between valid and masked, and valid and invalid preview indicated by a smaller late N1 components. Since the main visual pathway used by the parafovea is the magnocellular pathway, it was proposed that the magnocellular pathway could be responsible for global processing and the formation of a representation of the preview. Therefore, the current study aimed to manipulate the luminance of the preview by having magnocellular (white and black and achromatic) and parvocellular (red-green isoluminant) biased previews. Preview benefit was replicated for the valid preview in comparison to masked preview, however no significant late N1 reduction was observed between valid and invalid preview. There was also a smaller late N1 component found between white and black preview in comparison to isoluminant preview between valid and invalid preview. An interaction between the type of preview and the luminance of the preview was observed in which a reduced N1 amplitude between valid and masked preview depended on the luminance in which a smaller amplitude in the white and black condition in comparison to achromatic and isoluminant.