

Inhibition of Return Prevails in In-Car Visual Search when Interrupted by Driving

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Abstract (for a paper presentation)

Inhibition Of Return (IOR) refers to an inhibitory mechanism in visual search encouraging orienting towards novel locations and hence facilitating foraging and other search behaviors. The perseverance of the mechanism for facilitating visual search on an in-car display was investigated in a driving simulator experiment with 12 participants. Participants searched lists of music tracks on an in-car touch screen display with varying menu formats of grid or list menu structure, and with 6, 9 or 12 tracks per page. Participants' eye movements on the display were recorded with a sampling rate of 500 Hz. For each condition and for each participant, a page with interrupted search was selected for closer analysis on revisits per item. For the list-conditions there were no revisits at all, whereas for grid-conditions there were a couple of revisits for 4 participants on 5 pages (G6: 1, G9: 3, G12: 1). In total only 7.5% of the searches included revisits. The analyzed data does not reveal if the IOR span is limited, i.e., if the IOR is dependent on the duration of the interruption but the findings give strong support for the perseverance of IOR for facilitating visual search on an in-car display when interrupted by the visual demands of the driving task. The practical value of the finding is in providing details of drivers' visual behaviors for modeling efforts.