

## The effect of target size and salience in visual search within naturalistic scenes under degraded vision

Visual-search tasks require the use of all regions of the visual field to correctly locate and identify items of interest within a scene. We conducted two experiments to analyse the interaction between visual salience and target size with respect to various regions of the visual field. In experiment one, there were two letter sizes ( $0.41^\circ/1.08^\circ$  in width) that were crossed with the presence vs. absence of foveal vision. We manipulated salience by algorithmically selecting locations within greyscale naturalistic scenes for which there were low or high changes in local contrast upon letter insertion. Search time was decomposed into smaller epochs in order to analyse the time taken for participants to verify the target. Search times were lower for high salience and higher for the smaller target. Search performance with the artificially occluded foveal vision was unimpaired regardless of the target's salience. There was a cost to verification time, however, this was not enough to generate a cost to overall search time. Experiment two added an inverted foveal mask to simulate peripheral loss. Only the smallest target size was used whilst applying the manipulation of salience described above. The central blindspot was also larger ( $2.5^\circ$  radius). Search performance with peripheral loss was highest, however, verification time was similar to normal viewing. Searching for the target in lowly salient locations with the larger blindspot increased verification time. These experiments suggest that localisation depends highly on peripheral vision and not foveal vision and that a foveal blindspot is not detrimental to search performance.