**Abstract**

Visual neglect syndrome is characterized by a failure to attend to stimuli in contralesional regions of space. This deficit is usually paralleled with a bias in overt exploration (1). Here we further characterize this bias and investigate wether it is related to changes in the efficiency of low-level visual features to attract overt attention.

We found that right-side bias is also associated with fixation perseverance. This results in a center bias which restricts the range of different low-level features to attract fixations in the neglected field.

**Methods**

We recorded ocular movements of 15 patients with acute left-sided visual neglect and 8 age-matched controls while they explored 32 color images of everyday scenes.

The influence of low-level stimulus features on visual selection was evaluated by calculating the Kullback-Leibler Divergence (KLD) between the distributions of feature values at fixated and non-fixated locations for neglect and control subjects:

\[ \text{KLD} = \sum_{x} p(x) \log \frac{p(x)}{q(x)} \]

* **Feature Analysis**

In the left hemifield, for every feature analyzed we found higher KLD values for the neglect group as compared to controls. Four of these differences reached significance: Luminance (t = 2.34, p = 0.02); Red-Green Contrast (t = 2.6, p = 0.01); Yellow-Blue Contrast (t = 2.31, p = 0.03); Yellow-Blue Contrast (t = 2.61, p = 0.01).

**Conclusions**

- Neglect patients show an expected exploratory bias to the right. Furthermore, exploratory patterns are affected not only in the contralesional hemifield, but also in the ipsilesional side.
- There is an increased efficiency of low-level features to attract fixations in the neglected field. This effect is accompanied by an increased inter-subject predictability of attended locations.

- Overall, the results point to a disengagement of top-down control in neglect syndrome, thereby unmasking structures engaged in low-level processing.

**References**
