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What's in a line? The influence of valence, faces, and language on pseudoneglect

Bianca Hatin and Laurie Sykes Tottenham

Introduction

Line bisection is a simple measure of visuospatial bias. Most people display **pseudoneglect**: a leftward bisection bias

Pseudoneglect is thought to arise from right hemisphere dominance for visuospatial processing (Bultitude & Aimola Davies, 2006)

Recently, line bisection has been used as an indicator of relative hemispheric activation (e.g., Nash, McGregor, & Inzlicht, 2010). However, the assumption that line bisection performance reflects laterality above and beyond spatial processing has not been examined in depth.

Left Hemisphere Right Hemisphere

Language

Positive
valence

Faces

Negative
valence

If line bisection is an indicator of relative hemispheric activation, then lines imbued with stimuli associated with lateralised processes should draw bisections in a direction contralateral to the preferentially activated hemisphere.

Method

- n=51, right-handed
- Participants bisected computerized lines that varied by **type** (solid, word, face) and **valence** (negative, positive, neutral)
- Lines were bisected with left, right, and both **hands**

Face lines: (Faces from Matsumoto & Ekman, 1988)

Word lines: (Words from Bradley & Lang, 1999)

Solid lines:

- Bisection errors were measured to nearest pixel
Negative scores = leftward bias
Positive scores = rightward bias
- No influence of line thickness for solid lines $\therefore$ averaged to serve as baseline

Results

2 (**type**) x 3 (**valence**) x 3 (**hand**) ANOVA:
Valence x Type interaction: $F(2, 100) = 8.48, p < .001$

* paired sample t-tests showed significant deviation from baseline ($p < .01$)

Discussion

Line bisection can be influenced by lateralized stimuli, but in unexpected ways

Face lines drew bisections rightward, not further leftward as would be expected by right hemisphere activation.

- Local (left hemisphere) processing of detailed faces?**

Positively valenced words drew bisections leftward, not more rightward as would be expected by left hemisphere activation.

- Leftward scanning bias?**