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Attention Is Automatically Allocated To Negative Emotional Stimuli

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Introduction

Two recent papers have demonstrated surprisingly large effects of emotionally valenced stimuli on low level perceptual processes and argued that the effect occurred through a differential influence of emotionally valenced stimuli on the allocation of attention (Pratto & John, 1991; Ohnesorge & Bierman, 1998). The results of both these studies supported a similar conclusion; negative emotion stimuli demand more processing capacity than do positive stimuli. This result accords well with data from behavioral and physiological studies. One important issue, however, remains unresolved. The argument for differential attentional allocation is carried through an indirect inference rather than a direct demonstration of the effect. The present paper demonstrates that negative emotion stimuli strongly influence the automatic allocation of visual attention.

Experiment One

Subjects

27 Carleton undergraduates participated.

Design

The experiment was conducted within subjects There were three levels of Emotional Focus stimuli (Negative, Neutral, Positive), and five levels of Target Location.

Stimuli

There were two groups of stimuli in the study; Emotion Focus stimuli and single letter Target stimuli. The Focus stimuli were sets of Negative, Neutral and Positive Emotion words. Target stimuli were curved or angular letters.

Procedure

Following a fixation cross subjects viewed an emotion word presented for 300 ms. After a 100 ms ISI a target was presented at one of 5 positions and remained visible until the subject's response. There were 480 experimental trials.

Result

The planned comparison of Emotional Valence at Fixation (position 0) was significant, $\underline{f}(1,192) = 10.0$, $p < .01$. Target Classification time following a negative focus stimulus was 580 ms. Vs 608 ms. if the target followed a Neutral or Positive stimulus.
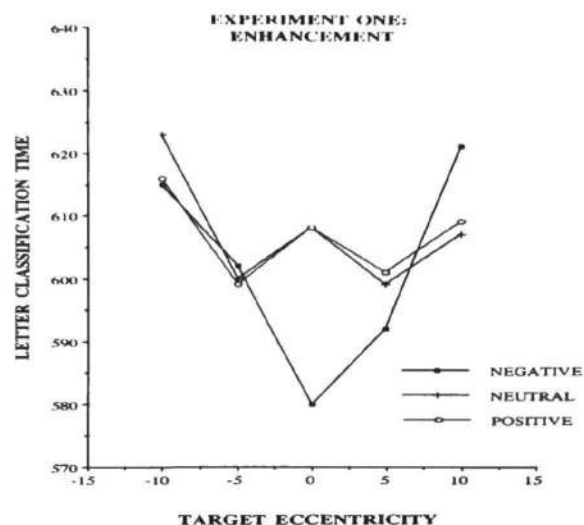

Figure 1; Letter Classification Following Presentation of Negative, Neutral, and Positive Emotion Words.

Discussion

The data reveal that a high efficiency attentional channel was opened at the spatial location occupied by a negative stimulus and it remained open for at least 100 milliseconds following the offset of a negative focus stimulus disconfirming the Disruption hypothesis. No such facilitation was observed for targets that followed a focusing stimulus from the positive or neutral set.

References

Ohnesorge, C.G., & Bierman, C. (1998). The Influence Of Emotional Valence In Backward: Evidence For Early Appraisal. *Proceedings of the 20th Annual Meeting of the Cognitive Science Society.*

Pratto, F., & John, O. (1991). Automatic Vigilance: The Attention-Grabbing Power of Negative Social Information. *Journal Personality & Social Psychology*, 61, 380-391.