Unintentional Semantic Selectivity is Found in Both Hemispheres

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Introduction

Spatial Attention and Semantic Priming

Dark, Vochatzer, and VanVoorhis (1996) showed unintentional semantic selectivity in a target identification task.
- Two briefly presented and masked words occurred centrally, one above and one below fixation, shortly after a centered prime.
- On half the trials, one word was related to the prime.
- The to-be-reported target was defined by an asterisk precise.

Target status and relatedness affected performance.
- Targets were more likely to be reported than distractors.
- Related words were more likely to be reported than unrelated words.

Selectivity via semantic priming and via spatial cueing reflect separate attentional mechanisms.

Lexical Processing in the Right Hemisphere

- Chiarello et al. (2003) suggested that semantic processing in the RH tends to be more diffuse and less precise than in the LH.
- Perceptual asymmetry models (e.g., Mondor & Bryden, 1992) suggest LVF-RH requires focused (spatial) attention to process words, while RVF-LH does not.

Might unintentional semantic selectivity be weaker for words presented to the LVF than for words presented to the RVF?

General Discussion

Experiment 1 - Inter-hemispheric competition between two words
- Overall, words presented to the LVF-LH are reported more often.
- Overall, primed words are reported more often.
- Overall, targets are reported more often.
- However, LVF-RH related targets inhibit the processing of RVF distractors and LVF-RH unrelated targets are identified less often than RVF related distractors.

Experiment 2 - Intra-hemispheric competition between two words
- No RVF advantage for overall report of words
- Overall, primed words are reported more often.
- Overall, targets are reported more often.

Might unintentional semantic selectivity be weaker for words presented to the LVF than for words presented to the RVF?

To what extent do spatial attention and semantic priming affect selection in a lateralized target detection task?

Methods

Participants
In Experiment 1, 32 right-handed undergraduates (9 males and 23 females, mean age = 19.3SD = 1.00) participated for course extra credit.

In Experiment 2, 32 right-handed undergraduates (18 males and 14 females, mean age = 19.84, SD = 1.66) participated for course extra credit.

Stimuli
96 semantically-related word pairs were gathered from the University of South Florida free association norms (Nelson, McEvoy, & Schrieber, 1998). Words were fully counterbalanced across participants.

Baseline - Neutral Trials

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<th>Verbal Response</th>
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<td>Target</td>
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<td>Exp. 1*</td>
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<td>Exp. 2</td>
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* There was a significant 3-way interaction, F(2,27) = 38.45, p < .0001.

References


