

## **Neurophysiological correlates of reading emotional sentences**

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More cognitive resources are required to process negatively-valenced than positively-valenced emotional information. This effect is known as the "negativity bias." We used event-related potentials (ERPs) to examine the neurophysiological correlates of reading pleasant, unpleasant and neutral words in the context of sentences about social situations. We constructed two-sentence scenarios; the first sentence described an ambiguous social situation, and a critical word in the second sentence determined whether the resolution of the ambiguity was positive, negative or neutral in valence. Critical words across the three scenario types were matched in frequency, number of letters, concreteness and cloze probability. ERPs were recorded as scenarios were presented, counterbalanced across three lists, to 36 right-handed, healthy volunteers. 18 subjects made emotional valence judgments (AT, active task), while 18 subjects simply read the sentences and answered comprehension questions at random intervals (PT, passive task). In the AT, a late positive component (LPC) was most positive to unpleasant words, less positive to pleasant words and least positive to neutral words, suggesting that online contextual updating demands were greatest for unpleasant emotional information. In the PT, a left-lateralized N400 elicited by unpleasant words was more negative than that elicited by both pleasant and neutral words, suggesting that the increased difficulty in integrating unpleasant emotional information occurred at a semantic stage of processing. Together, these findings suggest that the "negativity bias" influences fast, online processing of social information and that the precise stage at which it operates depends on the degree to which we focus on emotional content.