How Stable Is Emotional Word Experience? Effects of Induced Cognitive Control and Local Context

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Background: Emotional experience of words represents the emotional response to a stimulus, commonly described along two dimensions: emotional valence (EV) and arousal (A) [1, 2]. Although previous studies have shown that these dimensions are generally stable, more recent findings suggest that they can be modulated when the context of word evaluation is emotionally saturated (e.g., during the COVID-19 pandemic or induced negative scenes), with inconsistent effects in direction [3]. This raises the question of whether emotional meaning is inherent to words or can be constructed and changed by context. The first aim of this study was methodological: to examine whether subtle local contextual valence, induced via emoji pictures (positive, negative, neutral), can modulate unclear, particularly regarding whether they rely on shared mechanisms [4]. Therefore, the second aim was to examine whether increased engagement of CC would transfer to EC, increasing resistance to contextual influences during word evaluation.

Method: The experiment consisted of 11 blocks, each including a CC task followed by a word evaluation task. Cognitive control was manipulated using a modified flanker paradigm, with participants assigned to either a high-conflict condition (75% incongruent trials, N = 109) or a low-conflict condition (25% incongruent trials, N = 127). Participants rated 108 stimuli (36 positive, 36 negative, 36 neutral words, and 36 pseudowords) on EV and A scales, with each word randomly paired with a positive, negative, or neutral local context (emoji) presented above the word. Pseudowords were included as an additional control condition for examining the effect of local context valence on verbal material devoid of lexical meaning.

Results: Results showed that local contextual valence significantly modulated emotional experience of words. EV ratings decreased in negative contexts and increased in positive contexts across stimuli categories ($F(2, 98.79) = 31.04$, $p < .001$, $\eta_p^2 = .77$; Figure 1), with additional increases observed for positive words and pseudowords ($F(6, 88.65) = 3.00$, $p < .001$, $\eta_p^2 = .14$). Arousal ratings were also affected, with negative contexts eliciting higher arousal categories was observed. Although the CC manipulation was successful, it did not modulate contextual effects on emotional ratings and therefore did not enhance EC.

Discussion: These findings indicate that emotional experience of words is sensitive to local contextual valence, demonstrating that even subtle local induction via emoji pictures can alter EV and A ratings. At the same time, the absence of CC effects suggests limited transfer from CC to EC, supporting the independence of these two control processes.

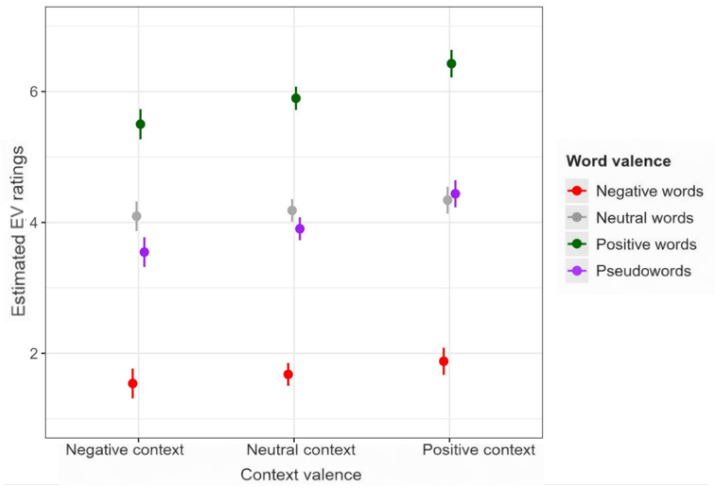

Figure 1: Estimated EV ratings for word categories by context.

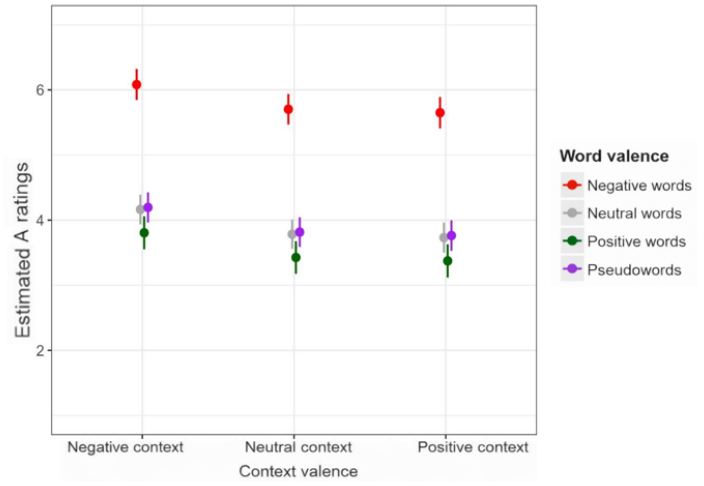

Figure 2: Estimated A ratings for word categories by context.

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