Effects of Word Frequency during the Processing of Emotional Words

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Abstract

High frequency words are usually processed faster compared to those words that are less frequently used in a language. This word frequency effect has been demonstrated to modulate the processing of words with an emotional connotations. In this regard, several studies have reported an interaction between word frequency and affective content with behavioural and neural activity measures in word recognition. Despite methodological differences in the experimental parameters examined in these studies, it can be shown that some of the variables that affect the processing of emotional connotation were not adequately controlled in some of these studies. This might account for the lack of convergent results. In the present study we aimed at clarifying the effects of word frequency on the processing of emotional words. Event-related potentials were recorded while participants made lexical decisions on high- and low-frequency negative and neutral nouns. Those components that reflect interactions between word frequency and emotion were detected with temporal and spatial principal component analyses. Low-frequency negative nouns were recognized faster than low-frequency neutral nouns. Low-frequency neutral nouns also elicited reduced amplitudes in a late positive component compared to low-frequency negative nouns. No differences were evident between high- and low-frequency neutral nouns. In sum, these findings are discussed to reflect an involvement of attentional mechanisms during the evaluation of the lexicality of a presented letter string that facilitate the processing of low-frequency negative nouns.

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