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Dynamics of Processing Emotional Words and Facial Expressions.

In recent neurocognitive research, the processing of emotions that are elicited in different stimulus domains has received special interest. It is suggested that emotional stimuli involuntarily draw attentional resources due to their high intrinsic relevance, resulting in preferential and sustained processing. As compared to natural sources of emotions, reading of printed words requires the translation of arbitrary symbols into meaning. In a series of experiments, we aimed to functionally localize the effects of emotion in visual word processing and to specify their underlying neural mechanisms as well as their boundary conditions. Our main research tool were event-related brain potentials (ERPs), which allow measuring the activity of distinct brain systems over time with high temporal resolution. Similar to affective pictures and facial expressions, emotional words elicit specific ERP components, which are distinguishable with regard to their temporal and spatial distributions and can therefore be related to different stages within the information processing stream. Importantly, these emotion effects depend on several factors defined by task demands and linguistic stimulus characteristics. Our findings demonstrate that emotional meaning affects the reader's mind already on the level of single words. The complex pattern of this impact and its implications for the processing of larger linguistic units will be discussed.