Do words stink? Investigating the effects of disgust on word processing

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Abstract

In this study, we investigated how disgust, a culturally learned discrete emotion, would affect visual word processing. In a behavioral study, we first investigated whether the processing of disgust words would lead to a facilitatory or inhibitory effect in a lexical decision task. Second, following the idea that "knowledge" about discrete emotions is shaped by learning and experience, we added measures of individual differences in disgust sensitivity, general emotion sensitivity, and perceived valence and arousal of our items. Results yielded an inhibitory effect of disgust on lexical decision performance (i.e. longer latencies and more errors to disgust than to neutral words). However, the effect was modulated by participants' sensitivity to disgust (only subjects with high disgust sensitivity showed clear inhibitory effects). Interestingly, disgust sensitivity but not perceived valence or arousal nor general emotion sensitivity predicted inter-individual differences in the size of the disgust effect in lexical decision. The latter finding is consistent with a theory which suggests that specific experience with an emotion rather than its general valence or arousal properties drive emotion effects in word processing. Finally, we investigated the neural correlates and the time course of the disgust effect in word processing using ERPs. Results showed an effect of disgust on both early (EPN) and late (N400, LPC) ERP components. Interestingly, neural source localization of the N400 suggested an involvement of the right anterior insula, which is known to be involved in processing disgust in faces or odors.

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