

# Evaluation of lexical and semantic features for English emotion words

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One issue in discourse comprehension research is situation model building. For concrete scenarios, the situation model might consist of a visual image of the text context. More generally, it encodes text dimensions such as causal structure, temporal sequences, or the emotional status of the protagonist (for a review: Zwaan and Rapp, 2006).

Emotional aspects have been shown to be important during text comprehension (Gernsbacher et al., 1992) and violations of the emotional status of the protagonist of a story were investigated using a consistency paradigm (Ferstl et al., 2005; Ferstl et al., 2007). Texts containing emotional information were shown to be processed in a qualitatively different way compared to texts containing chronological or spatial information, with the emotionally inconsistent texts eliciting repair and integration processes. In addition, emotional stories elicited activation in the limbic system (Ferstl et al., 2005; Ferstl et al., 2007). In these studies the consistency was manipulated by using a single emotional word within a context. It is therefore necessary to disentangle the lexical effect of the word itself from the effect of the text context. Processing of emotional words has been shown to be influenced by different features, such as emotional valence, arousal, imageability, age of acquisition and familiarity. These factors influence cognitive processing (as revealed by ERPs and eye-tracking measures and behavioural responses) during naming tasks, lexical decision tasks (Kuchinke et al., 2007; Kanske et al., 2007) and memory tasks (Maratos et al., 2000), employing written words or pictures (Weekes et al., 2007; Dolcos et al., 2002). The aim of the present study is to generate a corpus of English words of different emotional valence, evaluated for various lexical and semantic features. The corpus will be useful for experiments employing ERPs and eye-tracking techniques, to allow a better control of the effects of these features. Furthermore, the corpus could allow a well balanced selection of words employed for discourse processing research, so that the effect of text context can be separated from word level effects. 300 words were rated by 50 English native speakers. Emotional variables were valence and arousal. Lexical variables were age of acquisition and familiarity. Moreover, the words were rated with respect to imageability. The results of these

ratings were then used to create three sets of words: positive, negative and neutral. These sets are matched for frequency of use, word length in letters, syllables and phonemes and for concreteness. This corpus goes beyond similar works (e.g., Võ et al., 2006; Siegle, 1994), in which only a subset of these variables was considered. Possible uses of the corpus in studies of discourse comprehension are outlined. In particular, features such as arousal, imageability and age of acquisition should play a great role during situation model building and updating.