

Comment

Emotion and language – When and how comes emotion into words? Comment on “The quartet theory of human emotions: An integrative and neurofunctional model” by S. Koelsch et al.

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The Quartet Theory of Emotion [13] is the first emotion theory to include language as part of its four affect systems allocating two functions of language in emotion processing: communication and regulation. Both are supposed to occur late during the emotion process and by translation or reconfiguration of a pre-verbal emotion percept into a symbolic language code which then gives rise to the conscious experience of an emotion allowing communication or regulation [14] of a felt emotion.

On the other side no one would probably deny that words at least in spoken language are capable of eliciting strong emotional feelings (think about your last dispute or the pleasure you felt after being praised for something). Thus, language probably has a third function – an emotion eliciting function. However, when it comes to written word recognition there is much more controversy about how emotional meaning is processed.

At least two main views can be contrasted. The psycholinguistic view suggests that emotional responses to words are generated within the reading network itself and after being semantically processed. According to the neural re-use and the Panksepp–Jakobson hypotheses emotion words are processed in the same emotion regions as other stimuli carrying emotional information [1,11]. Thus, the theories differ according to the brain regions involved in emotional visual word recognition and also make different predictions about the time course of processing. If words activate the emotion network as the re-use hypothesis suggests processing is probably faster compared to the psycholinguistic view which assumes emotion processing only after semantic processing which is suggested to occur rather late in the course of visual word recognition [7].

Indeed there is evidence that the emotional meaning of words is processed at very early stages during visual word recognition [9,4,18] and furthermore that emotional valence and discrete emotions are reflected by words which are

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processed in brain structures other than the neocortex as for example the amygdala (e.g., [5,8,16,15,10]). Thus, it seems that words carry emotional meaning which is processed early in the emotion network. But how do words acquire emotional meaning?

Recent findings probably provide an answer to that question by showing that words acquire emotional meaning in the same way as non-verbal stimuli do namely by contextual learning [3,19,6]. The contextual learning hypothesis claims that the nature of emotion effects is based on a person's learning history with that emotion. This explanation fits with Panksepp's [17] view that emotion systems are evolutionarily predefined but are refined by experience.

Furthermore, as for example Kahneman [12] suggests in his prospect theory there is compelling evidence that all perceived stimuli probably evoke an affective evaluation which is not always conscious (e.g., Zajonc [20]). Maybe this is also true for words. Maybe well learned words are processed as visual objects that acquired emotional meaning through contextual learning and not as an abstract symbolic code and an emotional meaning/emotion percept is processed very early and sometimes unconsciously during the process of visual word recognition probably starting with a partially available visual image of the words [2,15]. In that case the striking fact would be that the emotion eliciting function of words would be of pre-verbal nature.

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