The extent of the effect of humorous meaning on visual processing

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Abstract

Early visual ERPs recorded at around 100-200 ms post-stimulus are indexes of structural encoding of physical characteristics of stimuli. Nevertheless, it has been shown that emotions can modulate amplitudes and latencies of the components arising at this time range. While emotions are generally thought to arise through the interaction of both bottom-up and top-down processes (Ochsner et al. 2009) it is unclear how each process distinctly contributes to the modulation of early visual processing. In the following experiment, we studied the extent of the effect of top-down modulation of emotion generated by humorous meaning, on visual processing. Subjects were first recorded while exposed to schematic meaningless drawings. These same stimuli showed different P100 and P200 activities when they were consecutively shown after the stimuli had received descriptive labels, in a separate learning phase. Moreover, P100 and P200 amplitudes differed in response to images previously paired with humorous descriptions compared to their neutral counterparts. Our study shows that early perceptual processing of identical visual stimuli can produce differential activities on the account of emotional meaning

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