

Facial expression analysis of implicit aesthetic processing

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Art has long been associated with promoting well-being, yet the underlying mechanisms remain unclear. Several studies suggest that engaging with art can enhance well-being, even when the artworks express cruel or emotionally intense content. In this study, we aimed to investigate how the implicit processing of art, conveying positive, neutral, or negative emotions, influences subsequent affective processing of a neutral stimulus, specifically through facial expression analysis.

Twenty-three art-naïve participants used the Self-Assessment Manikin (SAM) scale to rate the liking and arousal of emotionally neutral Chinese pictograms (targets) that followed the brief presentation of emotionally valenced artistic primes (positive, neutral, or negative). An adapted version of the Affective Misattribution Task (AMP) was employed to assess the impact of these emotional primes on the judgment of the neutral targets. Facial expressions were recorded using OpenFace software, with two temporal windows of analysis: the first lasting 500 ms to capture microexpressions, and the second lasting 2500 ms to explore the cognitive dimension of emotion.

Our findings revealed that positive primes led to an increased expression of joy, while negative primes activated facial muscles associated with fear in the early temporal window and disgust in later stages of emotional processing. Neutral primes appeared to have no significant effect on facial expressions. These results suggest that aesthetic evaluation can be activated at an implicit level and may play a role in emotional processing, contributing to the promotion of well-being through art engagement.

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