

EXPRESSION AND EMOTION

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Do Emotions Result in their Predicted Facial Expressions? A Meta-Analysis of Studies on the Co-Occurrence of Expression and Emotion

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Abstract

That basic emotions produce a facial signal would – if true – provide a foundation for a science of emotion. Here, random-effects meta-analyses tested whether happiness, sadness, anger, disgust, fear, and surprise each co-occurs with its predicted facial signal. The first meta-analysis examined only those studies that measured full expressions through FACS. Average co-occurrence effect size was .13. The second meta-analysis included both full and partial expressions, as measured by FACS or another system. Average co-occurrence effect size rose to .23. A third meta-analysis estimated the Pearson correlation between intensity of the reported emotion and intensity of the predicted facial expression. Average correlation was .30. Overall, co-occurrence and correlation were greatest for disgust, least for surprise. What are commonly known as the six classic basic emotions do not reliably co-occur with their predicted facial signal. Heterogeneity between samples was found, suggesting a more complex account of facial expressions.

Keywords: facial expression; basic emotion theory; coherence; meta-analysis.