
Early modulation of face processing in social anxiety: a spatiotemporal analysis of ERP responses.

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Abstract

Attentional biases towards social threat have been consistently evidenced in social anxiety, but the exact involvement of attentional components remains uncertain. As a consequence, this study explored the influence of social anxiety on attentional processing of emotional faces through electrophysiological activity. Twenty-six participants reporting high or low social anxiety performed a spatial orienting task while event-related brain potentials (ERPs) were recorded. Each trial consisted of a pair of faces (one neutral and one emotional face displaying anger, fear, disgust or happiness) presented for 200ms, followed by an arrow presented for 200ms at the location of one of the faces. Spatio-temporal principal component analysis was conducted on ERPs locked on the onset of the cues (faces) or targets (arrows). Baseline-to-peak analyses were performed on extracted components. High social anxiety participants showed enhanced amplitudes of P100/N100 complex when processing facial cues. In addition, amplitudes of N200 and P200 waves were enhanced in social anxiety. When considering target processing, social anxiety was associated with diminished amplitudes of P100 when targets replaced neutral faces, and with longer response latencies for targets following neutral cues in pairs involving anger. These results suggest that social anxiety may be associated with (1) an increased perceptual vigilance to faces, (2) a modulation of the emotional appraisal stage, and (3) difficulties to disengage from emotional faces to process neutrally-cued targets. These data provide evidence for a facilitated engagement towards facial stimuli followed by impaired disengagement abilities in social anxiety.

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