

144/06 - "Event-related brain potential correlates of conscious and non-conscious processing in anxiety"

Instituição/*Institution*: Birkbeck College, University of London and Roehampton University, London -UK

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Investigadores/*Researchers*: Dr. Anne Richards e Dr. Amanda Holmes, Dr. Emily Hannon

Objectives: An adaptation paradigm was used to examine the effect of context on emotional expression processing in anxiety. We predicted that fear/neutral morphs would be more likely to be classified as 'fearful' following neutral adaptation and 'neutral' following fearful adaptation. We examined several ERP components (P1, EPN and the LPP) in order to investigate the time course of differential processes involved in ambiguity resolution and whether these effects are modulated by anxiety.

Methods: A male and a female model were selected and fear/neutral morphs created. Participants classified test trials following adaptation to the fear or neutral exemplar. 16 test blocks were presented, and participants classified the emotional expression of each test trial. EEG was recorded using a NeuroScan NuAmps system, and stimulus presentation was controlled using E-Prime. The high temporal resolution of the EEG technique enabled us to examine the locus of the expression aftereffects in anxiety. Several ERP components were examined to see if they were modulated by anxiety.

Results: There was a shift in the behavioural classification of morphs towards 'fear' following adaptation to the neutral exemplar compared to adaptation to the fear exemplar, and this shift was equivalent for high and low anxiety. The behavioural analysis revealed that the female face was classified as being fearful more often at baseline and following neutral adaptation compared to the male face. An analysis of the ERP data, however, revealed a more pronounced late positive potential, beginning at ~400 ms post-stimulus onset, in the high but not the low anxiety group following adaptation to neutral compared to fear.

Conclusions: These data support the proposal that high anxiety is associated with increased sensitivity to contextual influences from top-down elaborative modulations, as reflected in an enhanced late positive potential deflection. These data offer support for an increase in sensitivity to context in high anxiety.

Discussion: The adaptation paradigm combined with behavioural report and EEG is a useful technique for examining the effect of context on categorization of ambiguous information. These data reveal a late effect of context on categorization in anxiety.

Publications:

Richards, A., Holmes, A., Pell, P. J., & Bethell, E. J. (submitted). Adapting effects of emotional expression in anxiety: evidence for an enhanced Late Positive Potential.

Keywords: ERPs, Anxiety, Adaptation, Emotional Expressions.