Attentional modulation of neural responses to faces

Results:

Event-related potentials analysed in consecutive studies led us to the following findings: a) the perception of fear from faces is gated by selective attention at early latencies, whereas only after 480 ms was the perception of disgust modulated by attention allocation; b) the order of presentation of external and internal facial features influence the integration of facial components into face gestalts, so that the external features may be especially relevant for initial object categorization while internal features would be more closely related to subsequent configural mechanisms; c) the verbal N400 wave was distinguished from its functional analogue during the processing of faces in a contextual preactivation task, which showed a predominantly occipital localization and differentiated neural generators; d) N400-like components elicited in a face-feature matching task revealed a larger and longer-lasting N400 effect with the prior presentation of internal features around 300-400 ms post-stimulus, involving a greater activation of frontal and left temporal brain areas; e) both explicit and implicit processing of famous faces resulted in an enhanced N250 whereas explicit processing was specifically associated with earlier N400 and P600, related to an increased activity within brain areas involved in identity processing around 250 and 450 ms; and f) the processing of familiar vs. unfamiliar faces in the face-feature matching task revealed that the so-called "internal features advantage" relies on the use of stored face-identity-related information around 300-600 ms, involving an incremented activity elicited by familiar stimuli in both posterior (ventral occipitotemporal) and more anterior (parahippocampal and orbitofrontal) brain regions.

Published Work:

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Areas of interest:

Cognitive Neuroscience, Neuropsychology, Psychophysiology

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