

## **Electrophysiological correlates of learning new faces: A study with event-related potentials and skin-conductance responses**

### **Results:**

This project aimed to investigate how new faces are learned, using event-related potentials (ERPs) and skin-conductance responses (SCRs) to assess implicit measures of recognition, as well as explicit behavioural measures. In several studies, we used a viewpoint or an apparent age manipulation to investigate the potential benefit of learning novel faces from more than one image when recognition from an unseen image is required, and also the role of prototype formation in learning new faces. Both behavioural and SCR results failed to indicate any degree of generalization from full-face and profile viewpoints to an unseen 3/4 view, with no evidence that learning two views of a face leads to significantly better recognition of a previously unseen intermediate view than learning a single view. ERP results, however, showed a modulation of the N170 face-related ERP by the number of learning views, whereby faces learnt in a single view elicited more negative amplitudes than faces learnt in two viewpoints, when tested on the novel 3/4 view. This result is compatible with a facilitation effect of learning two viewpoints, indicating some degree of generalisation. Other studies using an age manipulation provided some evidence that participants extract the mean of the two studied images (i.e. the prototype) as well as storing the seen exemplars, although an exemplar superiority effect seemed evident. In summary, ERPs suggested that some kind of structural information was extracted during learning, which facilitated recognition from novel views, even though this was not apparent in behavioural performance or other indirect measures, like SCRs. Still, over all, recognition seems to be primarily pictorially driven.

### **Area(s) of interest:**

Psychophysiology; Electroencephalography; Event-related potentials; Face processing.

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