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# Early ERP correlates of view-invariant face memories to unfamiliar faces

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## Abstract

Humans show excellent recognition memory for familiar faces across a variety of changes. However, little is known about how the brain processes and represents unfamiliar faces across image changes. To study the time course of the acquisition of perceptual memories to unfamiliar faces across view changes, early identity-sensitive event-related brain potential (ERP) components were recorded. Participants performed an identity-matching task where two unfamiliar faces were presented in succession, with a very short stimulus onset asynchrony (SOA) of 400 ms. The two faces showed either the same or two different individuals, and either the same view or two different views. Reliable occipito-temporal N250r repetition effects (200-300 ms) for same as compared to different facial identities were obtained not just in trials where faces were shown in the same view, but also when they were shown in different views. Importantly, the size of this N250r component was not modulated by view, demonstrating that this component reflects individual face recognition regardless of view. Findings confirmed that the N250r indexes the successful match between newly acquired perceptual face memories with on-line faces. Importantly, the present study showed that rapid repetition of unfamiliar faces results in the formation of view-invariant face memories. This highlights the ability of the human face processing system to extract viewpoint-independent neural codes for individual unfamiliar faces as early as 200 ms.

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