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Behavioral and Electrophysiological Evidence for Configural Processing in Fingerprint Experts

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Holistic processing has been studied in faces, and may represent one process underlying the development of expertise. In this work we examine how fingerprint examiners show evidence of configural processing when viewing fingerprint fragments. We find evidence for configural processing when fingerprints are presented in noise. Converging evidence was demonstrated in electrophysiological recordings. A particular component of the EEG/ERP known as the N170 is reliably delayed for inverted faces. This component was also delayed for inverted fingerprints, but only for fingerprint experts. The results constrain models of perceptual expertise and provide converging evidence that the delayed N170 component reflects the absence of configural processing.