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Memory for unfamiliar faces: effects of context, redundancy and inversion

Various competing models exist in regard to the representation involved in face recognition. Evidence for the holistic representation comes from empirical studies in which recognition of facial parts was superior from facial context (Tanaka & Farah, 1993, QJEP). Alternative approaches emphasize the special role of configural or relational features in face processing which is sometimes processed quite locally (Leder & Bruce, 2000, QJEP, Leder et al., 2001, perception). To understand which aspect of context provides a superior condition for face recognition, we present experiments in which complete faces as well as different part conditions are employed as conditions in test. Moreover, we investigated faces differing in configural or componential information in different contexts, which varied in their individual redundancy. Experiment 1 revealed that the size of the context including a critical element (eye region) becomes more influential the less redundant it is. In further experiments it was tested how these effects rely on configural features or line representations and how the effects rely on processing time. We conclude that the holistic processing hypothesis needs a reformulation in terms of the amount of individual information which is included in the "whole".