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Determinants of children's face processing

Notwithstanding infants' impressive preference for faces after birth face recognition during the first decade of life continues to undergo development. With increasing age and experience infants and children recognize more and more that a specific face identity has been encountered before and assess its familiarity. So far it is under discussion which potentially underlying determinants contribute at which age range to this development. It is important to specify such determinants because they might have an impact of understanding the roots of our face processing system per se and also on the management of face processing problems in children.

In different series of experiments the present contribution will demonstrate the relevance of three determinants of children's face processing development. The first determinant comprises the modes of face processing that infants and children use when they perceive and recognize faces. The results of our experiments show that there is a re-occurring shift from analytical to configural processing that underlies infants' and children's face processing.

The second developmental determinant of interest is the relevance of the emotional expression of a face for infants' and children's face processing. Our results revealed that in infants the emotional expression of a face facilitates their face recognition because facial identity and emotional expression are processed interactively with each other at that age. In older children, however, the processing of face identity became more and more independent of the emotional expression processing, although emotional expression is still processed in strong association with face identity information. It will be shown that this developmental change is only true in typically developing children.

The third determinant includes the impact of infants' experience with the ethnic variety of faces for their development of face processing. In addition to previous findings demonstrating the so-called other-race effect at 9-months of age our results show that increased experience with faces of an unfamiliar ethnic category can delay the onset of the other-race effect.

All in all this contribution will demonstrate that children's increasing face processing during the first decade of life depends on an effective processing mode, such as configural processing, on an appropriate processing of social face information like emotional expression and on the ethnic face categories children are mainly familiar with.