

Component and configural information in face recognition

Original title / Originaltitel

Komponenten- und konfigurale Information bei der Gesichtserkennung

Summary / Zusammenfassung

Faces are the most relevant stimulus class for humans. Although own race faces look very different, they are quite similar from a computational point of view. Faces do all share the basic components (eyes, mouth, nose, chin, ect.) in the same basic arrangement (e.g., the eyes are always above the nose which is above the mouth). In order to distinguish between faces, the human visual cognition system must be able to process subtle differences in the components and their spatial relationship (configural information). In this project in collaboration with the Max Planck Institute for Biological Cybernetics, Tübingen, Germany, we develop and apply a new psychophysical paradigm to investigate the role of local component information vs. global configural information for recognition of familiar vs. unfamiliar faces and recognition of own vs. other race faces. The results not only provide a better understanding of one of the most relevant cognitive abilities but have also implications for the development of automated face recognition systems (see also project "computational modeling of face recognition").

Weitere Informationen unter www.psychologie.unizh.ch/vicoreg/research/

Publications / Publikationen

Hayward, W.G., Rhodes, G., & Schwaninger, A. (in press). An own-race advantage for components as well as configurations in face recognition. *Cognition*. [PDF]

Schwaninger, A., Schumacher, S., Wallraven, C., & Bühlhoff, H.H. (in press). Using 3D computer graphics for perception: The role of local and global information in face processing. *Proceedings of the 4th Symposium on Applied Perception in Graphics and Visualization*, ACM Press, New York, USA. [PDF]

Collishaw, S., Hole, G., & Schwaninger, A. (2005). Configural processing and perception of head tilt. *Perception*, 34, 163-168. [PDF]

Schwaninger, A., Ryf, S., & Hofer, F. (2003). Configural information is processed differently in perception and recognition of faces. *Vision Research*, 43, 1501-1505. [PDF]

Schwaninger, A., Lobmaier, J., Collishaw, S.M. (2002). Component and configural information in face recognition. 2nd international Workshop on Biologically Motivated Computer Vision, Tübingen, Germany, November 22-24, 2002. *Lectures Notes in Computer Science*, 2525, 643-650. [PDF]

Weitere Informationen unter www.psychologie.uzh.ch/vicoreg/publications/index_byarea.htm

Keywords / Suchbegriffe

Face recognition, component information, configural information

Project Leadership and Contacts / Projektleitung und Kontakte

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Other Links to external Webpages / Andere Links zu externen Webseiten

<http://www.kyb.mpg.de/~aschwan>

Funding Source(s) / Unterstützt durch

EU

European Commission, COGVIS project (IST-2000-29375); Max Planck Society

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Duration of Project / Projektdauer

Jan 2001 to Nov 2008