

Animated composite

We have developed a new image format to enhance recognition of facial composites. The ability to correctly name a composite is substantially improved by presenting it as a series of caricatures (an exaggeration of its facial features from average). The format is effective for different types of composites: sketch, feature and holistic systems. This is a secondary exhibit and has been used in police investigations since 2007. There have been notable successes (e.g. tiny.cc/ManPRA).

Background

With funding from the UK government's Engineering and Physical Sciences Research Council (EPSRC), and in collaboration with the ACPO working group on facial identification, research (at the University of Stirling, University of Central Lancashire and University of Winchester) has developed an animated-image format for publishing composites in the media, on television and on the Internet. The animation contains a sequence of frames that show a composite image being caricatured, by progressively exaggerating its facial features, and then anti-caricatured, by making the features appear more average. The animated composite improves recognition of composites that are of poor quality, those named at only a few percent correct, as well as those that are better named, at around 25%. It works by making a composite more distinctive in appearance. See tiny.cc/animated-composite-1 for an animated example; contrasting frames taken from a caricature sequence are shown below (there are usually 21 individual frames in total).



The animated-caricature technique is effective for different types of system – feature, sketch and holistic – and has been described in the following two editions of the scientific journal, *Visual Cognition*; they can be downloaded from Charlie's Research webpage at tiny.cc/cfrowd.

- Frowd, C.D., Bruce, V., Ross, D., McIntyre, A. & Hancock, P.J.B. (2007). An application of caricature: how to improve the recognition of facial composites. *Visual Cognition*, 15, 1-31.
- Frowd, C.D., Skelton, F.C., Atherton, C., Pitchford, M., Bruce, V., Atkins, R., Gannon, C., Ross, D., Young, F., Nelson, L., Hepton, G., McIntyre, A.H., & Hancock, P.J.B. (2012). Understanding the multi-frame caricature advantage for recognising facial composites. *Visual Cognition*, 20, 1215-1241.

Procedure

Different computer programs are available for creating this secondary exhibit for enhancement. These include PRO-fit and EvoFIT commercial composite systems, both of which generate a moving sequence of 21 individual frames containing the original composite and the composite at different degrees of caricature. The format produced is a standard animated GIF image. The sequence takes 6 seconds to view from start to finish and can be presented using web browser or other standard programs (e.g. Microsoft Photo Viewer).

Contact

For further information contact Dr Charlie Frowd, Department of Psychology, University of Winchester, Sparkford Road, Winchester, Hampshire SO22 4NR.

Web: tiny.cc/cfrowd **Email:** Charlie.Frowd@winchester.ac.uk **Phone:** (01962) 624943