

Researchers point to digital gains in human recognition

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Human beings are highly efficient at recognizing familiar faces, even from very poor quality images.

New research led by a psychologist at the University of York is using advances in the level of detail available in [digital photography](#) to harness this human ability for use in forensics.

As the most commonly photographed objects are faces, there is potential in mining detailed facial images for hidden information. Until now, photographers might reasonably have assumed that their own face was absent from the image. But the research, led by Dr Rob Jenkins, of the Department of Psychology at the University of York and published in *PLOS ONE*, overturns this assumption.

By zooming in on high-resolution passport-style photographs, Dr Jenkins and co-researcher, Christie Kerr, of the School of Psychology, University of Glasgow were able to recover the faces of bystanders from reflections in the eyes of photographic subjects. The recovered bystander images could be identified accurately by observers, despite their low resolution.

To establish whether these bystanders could be identified from the reflection images, the researchers presented them as stimuli in a face-matching task. Observers who were unfamiliar with the bystanders' faces performed at 71 per cent accuracy while participants who were familiar with the [faces](#) performed at 84 per cent accuracy. In a test of spontaneous recognition, observers could reliably name a familiar face from an eye reflection image.

Dr Jenkins says: "The pupil of the eye is like a black mirror. To enhance the image, you have to zoom in and adjust the contrast. A face image that is recovered from a reflection in the subject's eye is about 30,000 times smaller than the subject's face. Our findings thus highlight the remarkable

robustness of human [face recognition](#), as well as the untapped potential of high-resolution photography."

The researchers say that in crimes in which the victims are photographed, such as hostage taking or [child sex abuse](#), reflections in the eyes of the photographic subject could help to identify perpetrators.

Images of people retrieved from cameras seized as evidence during criminal investigations may be used to piece together networks of associates or to link individuals to particular locations.

More information: The paper 'Identifiable Images of Bystanders Extracted from Corneal Reflections' by Rob Jenkins and Christie Kerr is published on *PLOS ONE* dx.plos.org/10.1371/journal.pone.0083325

Provided by University of York

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