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Hidden faces can be found by zooming into hi-res photos of eyes



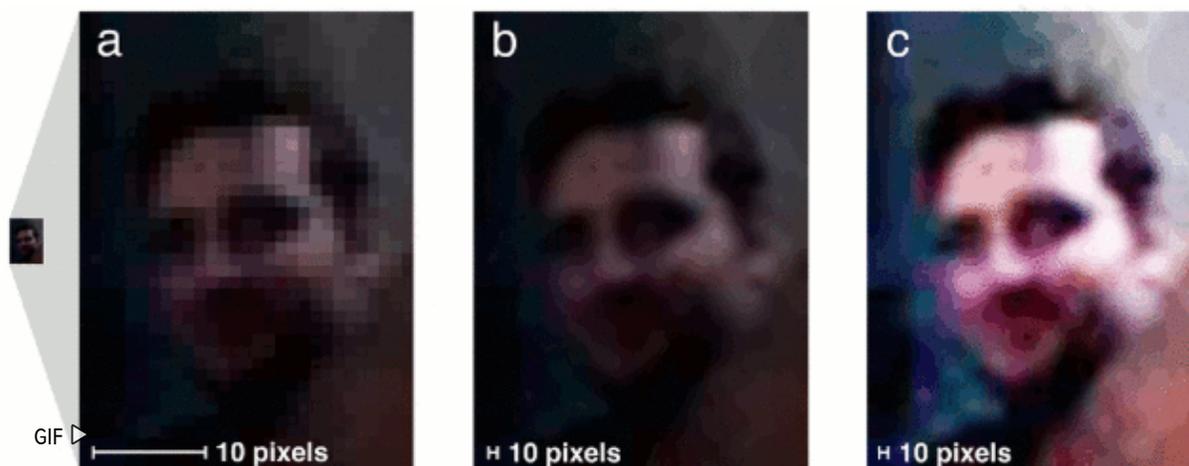
George Dvorsky
12/30/13 11:40am · Filed to: OPTICS

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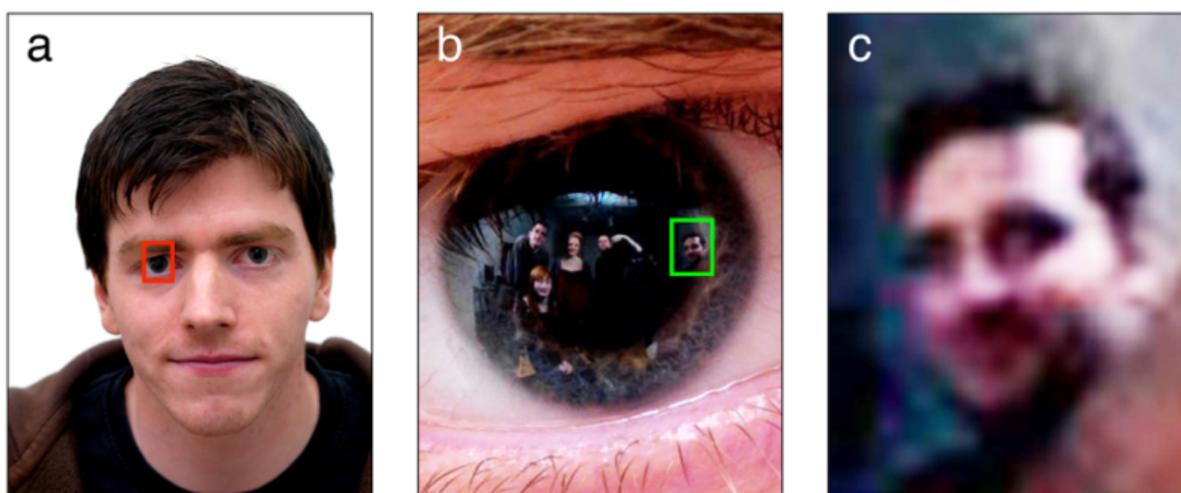


Talk about a scene right out of *Blade Runner*: By zooming in on high-resolution photographs of faces, researchers recovered images of unseen bystanders from reflections in the subjects' eyes. The technique could eventually be used in criminal investigations.

The dark and shiny areas of our cornea are like a black mirror reflecting the surrounding environment off of it. Given the power of high-resolution photography these days, it's conceivable that these reflections could contain decipherable information — the kind that could help investigators in crimes in which victims are photographed, like hostage taking or child sex abuse. Indeed, previous research has shown that faces can be identified from even the poorest quality images.



To see if recognizable images could be extracted from extreme zoom-ins, psychologist Rob Jenkins and Christie Kerr from York University asked volunteers to participate in a face-matching task.



They were presented with highly pixelated — but still identifiable — images drawn from the cornea of images taken by a 38 megapixel camera. On average, the whole-face area for the reflected bystanders was about 322 pixels. Incredibly, these images were reconstructed from a sliver of digital information about 30,000 times smaller than the subjects' face.



Observers who were unfamiliar with the bystanders' faces achieved 71% recognition accuracy, while those who were familiar were recorded at 84% accuracy. And in a test of spontaneous recognition, they could accurately name a familiar face from an eye reflection image.



Interestingly, the researchers insist that the photos don't need to be taken at such a high megapixel rate. What's more important, they say, is to find people familiar with the faces in question.

For those of you concerned about privacy, this should give you some food for thought the next time you upload your images to Instagram or Facebook.

Read the entire study at *PLoS One*: "Identifiable Images of Bystanders Extracted from Corneal Reflections."

Image: Jenkins & Kerr/PLoS One.

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