Face Recognition: The Eyes Have It

ScienceDaily (Mar. 27, 2009) — Our brain extracts important information for face recognition principally from the eyes, and secondly from the mouth and nose, according to a new study from a researcher at the University of Barcelona. This result was obtained by analyzing several hundred face images in a way similar to that of the brain.

Imagine a photograph showing your friend's face. Although you might think that every single detail in his face matters to recognize him, numerous experiments have shown that the brain prefers a rather coarse resolution instead, irrespective of the distance at which a face is seen. Until now, the reason for this was unclear. By analyzing 868 male and 868 female face images, the new study may explain why.

The results indicate that the most useful information is obtained from the images if their size is around 30 x 30 pixels. Moreover, images of eyes give the least "noisy" result (meaning that they convey more reliable information to the brain compared to images of the mouth and nose), suggesting that face recognition mechanisms in the brain are specialized to the eyes.

This work complements a previously conducted study published in *PLoS One*, which found that artificial face recognition systems have the best recognition performance

when processing rather small face images – meaning that machines should do it just like humans.