

The nose knows: 2 fixation points needed for face recognition

20 October 2008

Many of us are bad at remembering names but we are very quick to point out that at least we never forget a face. Never mind recognizing a familiar face- how is it that we recognize faces at all? Facial recognition is so automatic that we do not think about how our brain actually perceives a face. Previous studies have indicated that during face recognition, we look most often at the eyes, nose and mouth. Now, a new study has pinpointed exactly where our eyes land when we see a face.

Cognitive Scientists Janet Hui-wen Hsiao and Garrison Cottrell from the Temporal Dynamics of Learning Center at the University of California, San Diego examined this by showing volunteers frontal-view images of faces, one at a time, and recording their eye movements with an eye tracker. By using the eye tracker, the researchers were able to measure fixation points when the faces were shown (i.e. where on the face the volunteers looked).

In addition, the researchers limited the number of fixations that volunteers could make when looking at the faces to one, two, three or an unlimited number, by replacing the face with an average of all of the faces in the study when the number of fixations exceeded the limit. This is done while the eyes are "in flight" to the next fixation - when we are virtually blind until we land at the next spot.

The results, reported in the October issue of *Psychological Science*, a journal of the Association for Psychological Science, showed that during face recognition, the first two places we look at are around the nose, with the first fixation point being slightly to the left of the nose. This was surprising, as previous research has suggested that the eyes may be the critical point for face perception. In this study, it was not until the third fixation that participants looked at the eyes.

The researchers also found that two fixations are optimal for face recognition. Given the same

amount of time to view each face, the volunteers performed better when they were allowed to make a second fixation than when they could look at only one fixation. The authors noted, "This suggests that the second fixation has functional significance: to obtain more information from a different location."

The authors conclude that the nose "may be the 'center of the information', where the information is balanced in all directions, or the optimal viewing position for face recognition."

Source: Association for Psychological Science

APA citation: The nose knows: 2 fixation points needed for face recognition (2008, October 20) retrieved 24 February 2021 from <https://medicalxpress.com/news/2008-10-nose-fixation-recognition.html>

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