Study shows face matching for passports and IDs incredibly fallible

March 11 2014

New research finds face matching, as when customs agents check passports, to be incredibly fallible, with error rates between 10 and 20 percent under ideal, laboratory-induced conditions, and much worse in more realistic settings.

"Because society relies on [face perception](#) and ID verification for many tasks, people are often under the impression that we are experts in this domain," said LSU Assistant Professor of Psychology Megan Papesh. "Our research shows the precise opposite."

In a recent article published in *Attention, Perception, and Psychophysics*, Papesh explores the difficulty of matching faces to photo IDs, and demonstrates how observers who rarely encounter fakes or stolen IDs are actually far more likely to "miss" them when they do occur. Issues such as lighting and angles used in photography as well as cosmetic changes, such as haircuts, growing a beard or weight gain/loss, complicate matters considerably.

"In most high-risk situations (e.g., passport control), people can assume a very low rate of fake or stolen IDs," said Papesh. "Unfortunately, these conditions are also those most likely to give rise to poor detection rates. In our research, when observers infrequently encountered fake IDs, they failed to catch approximately 45 percent of them, even when given multiple opportunities to correct their errors."

Along with her co-author, Stephen Goldinger of Arizona State

University, Papesh found that error rates in face-to-face identifications might be alarmingly high due to the complexities involved in mental processes used to identify an unfamiliar face. In their study, volunteers viewed recent photographs of consenting adults paired with a matching or non-matching student ID photo taken up to 7 years earlier.

Each subject made match/non-match decisions to more than 200 pairs, with non-matching targets appearing frequently (50 percent of the time) or infrequently (10 percent of the time). When the targets appeared frequently, observers missed approximately 20 percent of them.

When those targets appeared infrequently, however, error rates jumped to more than 40 percent. These high miss rates persisted despite several attempts to get observers to slow down and catch their errors, suggesting that face matching is poor under the best of conditions and even worse when conditions become more challenging. Consider that miss rates of up to 30 percent are harmless in laboratory settings but vital in real-life settings, such as airport security screenings.

Provided by Louisiana State University