

# Lying Is Exposed By Micro-Expressions We Can't Control

May 8 2006

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When trying to lie your way through any situation, keep a tight rein on your *zygo maticus major* and your *orbicularis oculi*. They'll give you away faster than a snitch. So says social psychologist Mark Frank, whose revolutionary research on human facial expressions in situations of high stakes deception debunks myths that have permeated police and security training for decades.

His work has come to be recognized by security officials in the U.S. and abroad as very useful tool in the identification and interrogation of terrorism suspects.

By applying computer technology to the emotion-driven nature of nonverbal communication, Frank, a professor of communication in the School of Informatics at the University at Buffalo, has devised methods to recognize and accurately read the conscious and unconscious behavioral cues that suggest deceit.

His research already is employed by investigative bodies around the world and, Frank says, "It can be applied to the training of security checkpoint personnel to help them identify and decode 'hot spots,' the subtle conversational cues and fleeting flashes of expression that betray buried emotions or suggest lines of additional inquiry."

Frank notes that a large body of prior research has elaborated and sharpened Darwin's observations about the evolutionarily-derived nature of emotion and its expression.

In fact, Frank's mentor during his post-doctoral years at the University of California, San Francisco, was Paul Ekman, the world's foremost expert in reading facial expressions. Ekman conducted extensive cross-cultural research and found that a wide range of facial expressions related to specific emotions are identical from culture to culture.

He found that subjects' tics, furrows, smirks, frowns, smiles and wrinkles as they emerge in assorted combinations offer surprisingly accurate windows to the emotions.

"Fleeting facial expressions are expressed by minute and unconscious movements of facial muscles like the frontalis, corregator and risorius," Frank says, "and these micro-movements, when provoked by underlying emotions, are almost impossible for us to control."

Ekman and his colleague Wallace Friesen came up with a numbering system for all of these movements: for example, left and right eyebrows up is 1; down, 2; eyebrows pulled together, 4; upper eyelid raised, 5, and so on and related them to expressions of various emotion that are found the world over.

Building on their research, Frank has identified and isolated specific and sometimes involuntary movements of the 44 human facial muscles linked to fear, distrust, distress and other emotions related to deception.

Then, in a project for the National Science Foundation, he developed computer programs that automated Ekman's numbering process, making it possible to identify automatically every facial expression, including those tied to deceit, shown by subjects in taped interviews. Before this automation was developed, it took up to three hours of playing, rewinding and replaying, videotapes to analyze a single minute of blinks and twitches.

Frank's system has proven successful in identifying suspects involved in conventional criminal and potentially criminal behavior. It is now being tested for use in identifying potential terrorists.

"I want to make it clear that one micro-expression or collection of them is not proof of anything," Frank says. "They have meaning only in the context of other behavioral cues, and even then are not an indictment of an individual, just very good clues."

J.J. Newberry, formerly of the federal Bureau of Alcohol, Tobacco and Firearms, calls Frank and his methods "uncanny."

They are so effective that although he does not advertise his work nor actively solicit contracts in the field, Frank been asked to assist judges; health and police agencies, including the Los Angeles Police Department, the U.S. Federal Judiciary, the Bureau of Alcohol, Tobacco and Firearms and Department of Homeland Security, and other legal, medical and law enforcement communities from Singapore to Scotland Yard.

Since 9/11, a variety of federal government agencies have provided funding for Frank, although he declines to discuss the precise nature of his current research until it is complete and published.

In the course of his work with various investigative units, Frank says that, in addition to teaching them how to recognize behavioral cues, he has successfully advocated the use of a "rapport building" style of communication in interviews, because it is much more effective than the hostile/accusatory styles used in the past.

Frank says he began to develop identification skills when he was bouncer in a Buffalo bar. He says he trained himself to spot behavior that suggested that patrons were underage, packing a .22 or itching for a

fight. He developed a sixth sense that allowed him to spot potential troublemakers by the way they looked when they walked in – "like they were trying to get away with something," he says. These were, for the individuals in question, high-stakes situations.

He honed his skills during years of research by staring at miles of videotape (sometimes in slow motion) in which crooks, sneaks and killers proclaimed their innocence, or hundreds of volunteer student liars tried to earn a little cash by successfully deceiving their interviewers.

"This identification skill is one that some police employ successfully. They work in a high-stakes profession that helps them develop what they would call an acute intuitive sense," says Frank, the son of a Buffalo police officer

"What we have done is quantify it, automate it, prove its effectiveness and teach it very effectively."

Source: University at Buffalo

Citation: Lying Is Exposed By Micro-Expressions We Can't Control (2006, May 8) retrieved 2 May 2024 from <https://medicalxpress.com/news/2006-05-lying-exposed-micro-expressions.html>

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