Detecting deceit with micro-expression analysis

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A bank, which was a victim to a recent fraud, called in Dave Zulawski, CFE, CFI, to interview bank personnel. The initial investigation indicated the bank's collection manager of 20 years, George, was fraudulently selling vehicles the bank had repossessed. A previous audit had identified 60 vehicles that hadn't been sold through approved auctions in the two months prior to the interview. Further investigation showed that someone was selling the vehicles to an out-of-state dealership or to nonexistent companies. The bank was losing an average of $10,000 per vehicle that wasn't sent to auction.

In this column, we describe how Zulawski obtained a confession from George utilizing a valuable interview tool: micro-expression analysis.

Many researchers have written about how a person's physical and verbal behavior can betray them when they lie. In recent years, the relationship between micro expressions and detecting deception has been explored in great detail. Paul Ekman, who began his pioneering research into micro expressions in the 1950s, raises an imperative point when he says micro expressions tell you that an emotion has been concealed. They don't tell you *how* or *why* it was concealed, and they must be evaluated in the context in which they occur. (See "Emotions revealed" by Paul Ekman, St. Martin's Griffin, 2003, p. 215.)

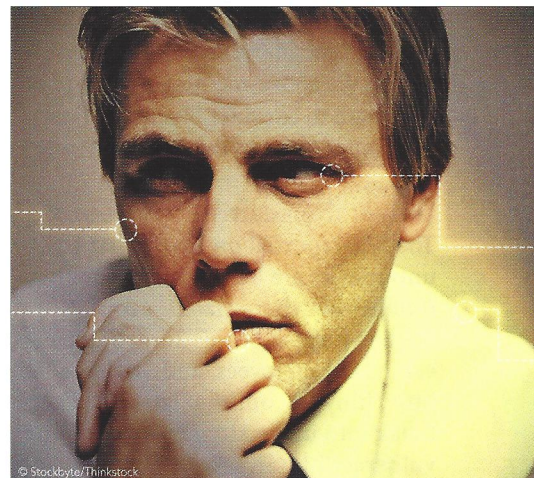Micro expressions are fleeting facial expressions linked to real emotions. They're the result of an individual either consciously or unconsciously suppressing or repressing an emotion. They can appear, and disappear, as fast as one-fifth of a second. (See Ekman's "Emotions revealed," page 15.)

More than words

People typically use three tools to deliver a message in conversation: physical behavior, tone of voice and the actual words they speak. On average, about 55 percent to 65 percent of any message is delivered through physical behavior, about 30 percent to 40 percent by tone of voice and less than 10 percent by the actual words. (See "Practical aspects of interview and interrogation," second edition, by David E. Zulawski and Douglas E. Wicklander, CRC Press, New York, 2002, page 106.)

If all three tools are congruent it's more likely a person is telling the truth. For example, if a person says they're happy they should smile and have an upbeat tone of voice. The fraud examiner should become concerned if the physical behavior and/or tone of voice reveal an emotion that doesn't support the actual words a person speaks.

It's widely accepted that there's no single behavior that's always indicative of truth or lies. Therefore, relying on a single behavior that happens as fast as one-twenty-fifth of a second can be especially risky. In fact, many research studies show an untrained person typically has less than a 50/50 chance of identifying deception. (See "Accuracy of Deception Judgments," by Charles F. Bond Jr. and Bella M. DePaulo in *Personality and Social Psychology Review*, 2006, 10, p. 214-234, http://tinyurl.com/n4sef2s.)

When a fraud examiner attempts to determine if a person is being honest, he or she needs to consider the totality of circumstances. These, of course, often include any facts of the investigation, employment history, personal characteristics, relationships with the fraud examiner, potential consequences and rewards associated with a lie, as well as any additional environmental factors.

With so many factors to consider, fraud examiners will have a much higher likelihood of accurately detecting deception if they look for *behavior clusters*. A behavior cluster occurs when two or more behaviors change simultaneously. These can include either physical or verbal behaviors. Once a fraud examiner identifies a behavior cluster he or she must correlate it with the specific stress that sparked it — and the totality of circumstances surrounding the cluster — to arrive at an accurate assessment as to why the person is lying and what he or she is lying about. Micro expressions can be a powerful piece in any behavioral cluster but, as with any other singular behavior, can be dangerous to interpret alone.

Can't fight the feeling

To help illustrate the role that emotions can play in exposing deception,

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we created a study with a group of 25 college students at a liberal arts college located in the Midwest. (Our study mirrored a previous study by David Matsumoto, one of the leading researchers in the field of micro expressions and emotions.) We asked the volunteers to choose a controversial topic that they were passionate about from a prepared list of topics. Once they selected a topic we asked them to defend a position opposing their own, which forced the students to conceal their real emotions. By doing so, the interviewer could focus on the role that emotions play in betraying liars.

The volunteers' predominant micro expressions throughout the interviews were disgust and anger. Fear and surprise became the two micro expressions most often displayed when we asked the students unexpected follow-up questions.

Fraud examiners can benefit from considering what emotional shifts their questions may cause during a conversation. If they can anticipate what an honest person's reaction should be to a question, they can compare the reaction they do receive to the reaction they anticipated. For example, it should be unlikely for someone to flash a micro expression of fear, disgust or contempt when a fraud examiner asks that person a simple question regarding an accounting journal entry. If the fraud examiner catches the micro expression and evaluates it with the other circumstances involved at that moment in the conversation, the fraud examiner should have a much better idea of how the person is truly feeling and what he or she is likely hiding.

These assumptions become much more powerful when one considers the corresponding physical and verbal behaviors. During especially stressful moments in the conversations, student volunteers displayed fearful looks, had difficulty maintaining eye contact, shifted their body positions in their seats, gulped, scratched or rubbed their hands and manipulated their clothing. Their verbal behavior also changed with generally vague explanations, hanging sentences and a lack of confidence in their tones of voice. These behaviors combined to form behavioral clusters that were reliable indicators of potential deception because they happened during stressful moments in the conversations.

Interviewer's patience after creating stress

Fraud examiners similarly create stress for the people they interview. Returning to the bank fraud case at the beginning of the column — when the investigator, Zulawski, introduced himself to George he immediately saw the micro expressions of fear (raised, straight eyebrows; visible white above the eyes; and lips stretched horizontally) flash across the manager's face. Zulawski was patient, established the manager's behavioral norm and built some rapport.

While building rapport, Zulawski mentioned George's supervisor and witnessed the micro expression for contempt (the lip corner pulling to one side) on George's face. Zulawski proceeded to ask George about his job responsibilities. When George mentioned recovering repossessed vehicles, Zulawski saw the micro expression for sadness (a wrinkled forehead, lower lips pulled down and drooped upper eyelids) flash across his face. The micro expression happened simultaneously to George breaking eye contact, adjusting his body weight in his seat and scratching his left wrist with his right hand. This behavioral cluster immediately alerted Zulawski to George's nervousness about discussing the topic and apparent sadness with his involvement in the process.

When Zulawski recognized these micro expressions he understood that George was afraid that Zulawski detected his fraudulent activity, sensed that he probably felt morally superior to his vice president and that George wasn't proud of his actions. Therefore, Zulawski was able to obtain George's full confession of fraudulently selling the 60 vehicles and several other frauds the bank wasn't aware of. Zulawski also learned enough about George's complicit relationship with a tow truck driver to forward information to the local authorities.

Consider the bigger picture

The ability to identify micro expressions is definitely a valuable tool for any interviewer or fraud examiner. However, focusing on one slight behavior can cause an interviewer to overlook larger behavior clusters that betray a dishonest person's message.

Fraud examiners will have an easier time detecting deception when they enter interviews with solid strategies based on the research they completed, an understanding of the clients' accounting system and the characteristics of the persons they will be interviewing.

Fraud examiners should also consider what might motivate clients to lie or tell the truth when they're finalizing their strategies. Once fraud examiners establish these game plans, they no longer need to focus on their lines of questions and instead can focus on interpreting the answers they're receiving and the behaviors they're witnessing to uncover the truth. ■ FM

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