Psychological sleuths

Detecting deception

Some research links lying with such facial and bodily cues as increased pupil size and lip pressing but not with blinking or posture.

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Telling a little white lie may on occasion soothe ruffled social feathers, but covering up a murder plot or withholding information on terrorist cells can devastate individuals and society at large. Yet detecting deception often stumps the most experienced police officers, judges, customs officials and other forensic professionals. Research has shown that even agents from the FBI, CIA and Drug Enforcement Agency don't do much better than chance in telling liars from truth-tellers.

For example, a recent, as yet unpublished meta-analysis of 253 studies of people distinguishing truths from lies revealed overall accuracy was just 53 percent--not much better than flipping a coin, note the authors, psychologists Charles Bond, PhD, of Texas Christian University, and Bella DePaulo, PhD, of the University of California, Santa Barbara.

Spotting the sneaks can be tough. Polygraph tests- so-called "lie detectors"--are typically based on detecting autonomic reactions and are considered unreliable (see "The polygraph in doubt"). That's why psychologists have been cataloging clues to deception--such as facial expressions, body language and linguistics--to help hook the dishonest. From this research, psychologists are developing new detection tools such as software to analyze facial expressions and writing style.

They're also training law-enforcement experts. One psychologist doing this is Paul Ekman, PhD, an emeritus psychology professor at the University of California Medical School, San Francisco, who's studied deception for some 40 years. As part of the Oakland, Calif.-based Institute for Analytic Interviewing, he teaches interviewing skills to everyone from airport security guards to counter-terrorism agents, foreign-service officers and police interrogators, including officials from the CIA, FBI and other such federal agencies.

Mark Frank, PhD, a Rutgers University associate professor of communications, and Ekman are now gathering data on the demeanor and physiology of a large sample of people who tell "high-stakes" lies--for which they could lose money, their spouse, their reputation, their freedom or their life. Ekman says the findings from this new data set should provide "an awful lot [to the field]. I think there'll be a giant leap."

Deception cues debated

Are appearances deceiving? The evidence is mixed. DePaulo and co-author Wendy Morris, a psychology graduate student at the University of Virginia, conducted a meta-analysis into the possible predictors of deception for "Deception Detection in Forensic Contexts" (forthcoming from Cambridge University Press). They warn readers that detecting deception is an inexact science, but note an association between lying and increased pupil size, an indicator of tension and concentration. Second, they find that people listening to liars think they seem more nervous than truth-tellers, perhaps because their voices are pitched higher. And liars are more likely than truth-tellers to press their lips together. On the other hand, they note, liars don't appear to be more fidgety, nor do they blink more or have less-relaxed posture. According to DePaulo and Morris, only when liars are more highly motivated--when the stakes are higher--do they seem unusually still and make notably less eye contact with listeners.

Also investigating bodily deception cues--particularly facial ones--are Ekman and his associates, who in 1978 published the Facial Action Coding System (FACS), which, when combined with voice and speech measures, reaches detection accuracy rates of up to 90 percent, Ekman claims. He and his colleagues are now automating the FACS for use in law enforcement. Meanwhile, they're trying to raise the accuracy rate even higher.

Of the FACS Ekman says, "We get our biggest payoff from face and voice cues when dealing with lies about emotions at the moment. We add cues from gestures and words when it comes to lies about beliefs and actions, such as crimes." Ekman and his colleagues do not reveal or publish each validated sign of deception for a very practical reason: They don't want to tip off the wrong people.

Ekman, through close study, learned that "micro-expressions" lasting less than one-fifth of a second may leak emotions someone wants to conceal, such as anger or guilt. At the same time, signs of emotion aren't necessarily signs of guilt. An innocent person may be apprehensive and appear guilty, Ekman points out.

He says, "You must use lying as a last interpretation and rule out everything else that's possible."

To tell the truth

Facial expressions aren't the only clue. Because deception is a social act involving language, researchers are also studying liars' verbal and written output to find distinctive patterns.

DePaulo and Morris say that liars take longer to start answering questions than truth-tellers--but when they have time to plan, liars actually start their answers more quickly than truth-tellers. And they talk less. On the whole, to other people, liars seem more negative--more nervous and complaining, and less cooperative--than truth-tellers, they say.

The content of conversations can be another tip-off. DePaulo and Morris report that liars seem to withhold information, either from guilt or to make it easier to get their stories straight.

"Liars' answers sound more discrepant and ambivalent, the structure of their stories is less logical, and their stories sound less plausible," they say. Liars also use fewer hand movements to illustrate their actions but are more likely to repeat words and phrases, they add.

At the University of Texas at Austin, psychology professor James Pennebaker, PhD, and his associates have developed computer software, known as Linguistic Inquiry and Word Count

(LIWC), that analyzes written content and can, with some accuracy, predict whether someone is lying. Pennebaker says deception appears to carry three primary written markers:

* Fewer first-person pronouns. Liars avoid statements of ownership, distance themselves from their stories and avoid taking responsibility for their behavior, he says.

*More negative emotion words, such as hate, worthless and sad. Liars, notes Pennebaker, are generally more anxious and sometimes feel guilty.

* Fewer exclusionary words, such as except, but or nor--words that indicate that writers distinguish what they did from what they did not do. Liars seem to have a problem with this complexity, and it shows in their writing.

The LIWC software--published by Lawrence Erlbaum--has been significantly more effective than human judges in correctly identifying deceptive or truthful writing samples, with an average accuracy rate of 67 percent as opposed to 52 percent. The samples were typed in five-minute sessions by participants who were asked to write--as persuasively as possible-- truthful and deceptive essays about their views on abortion. They had given their true views, making it possible to know when they were lying.

At New Mexico State University, psychology doctoral student Gary Bond and his colleagues replicated the accuracy rates of LIWC in the field, analyzing the transcribed speech of felons jailed in New Mexico, Kansas and Mississippi and asked to tell the truth or lie about a video they had just seen. What's more, truthful statements again had fewer negative emotion words and more self-referencing and exclusive words than false statements.

Human lie detectors

Computer programs aren't the only methods of detecting lies. Some scientists believe that people--such as law-enforcement officers--can be trained to recognize liars through behavioral clues.

In June, APA teamed up with the FBI and the National Institute of Justice on a comprehensive workshop for top law enforcers on the use of intuition. Experts presented the latest research on detecting deception and related psychological topics such as bias and event memory. Ekman thinks such behavioral training may help authorities spot subtle cues that they might miss because they deal with so many liars.

There are no signs of lying per se, but rather signs of thinking too much when a reply should not require thought, or of emotions that don't fit what is being spoken, he says. "We train people to look for 'hot spots,' where they're not getting a full account," he explains.

His Institute for Analytic Interviewing trains people to detect deception in the context of research findings on personality, memory and more. For example, Ekman says that skilled interrogators build rapport with suspects: "People will tell their story if they think you're being open-minded."

Meanwhile, Ekman has teamed with psychologist Maureen O'Sullivan, PhD, of the University of San Francisco, the lead investigator on a study of the hard-to-find, very small fraction of emotionally intelligent people who can very accurately distinguish deceptiveness from truthfulness. Some of them use the demeanor and vocal clues mentioned in this article, but others base their judgments on behaviors and word usage that no researcher has previously identified, O'Sullivan explains.

Can psychologists learn from these divining rods to train less-sensitive people? Ekman thinks more research is needed. O'Sullivan speculates that it could work only for those with some core skill: "Not everyone can be an Olympic athlete," she explains. "Agencies should identify people with basic talent and train them."

Shedding more light on the matter is Frank of Rutgers, who, with Tom Feeley, PhD, of the University at Buffalo of the State University of New York communication department, recently examined the research on training in the detection of deception.

"It showed that although the training methods used by most researchers were clearly inferior [such as just 10 to 15 minutes of training], there was still a significant--if weak--training effect. So we speculated that if training were done properly, it could work considerably better," says Frank.

Psychology could have a lot to offer, write DePaulo and Morris in their forthcoming book chapter: "Good human lie detectors, if there are such persons, are likely to be good intuitive psychologists. They would figure out how a person might think or feel if lying in a particular situation, then look for behavioral indications of those thoughts or feelings."

In the end, detecting deception is all about honesty. Ekman concludes, "It's much harder to find the truth than to find a lie. A good lie-catcher is good at identifying truthfulness."

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Psychologists have repeatedly told U.S. courts that polygraph tests--popularly thought to reveal a person's truthfulness through assessment of physiological states--are theoretically unsound and not valid in assessing honesty.

Explains psychologist Leonard Saxe, PhD, a professor and polygraph researcher at Brandeis University, "Because of the nature of deception, there is no good way to validate the test for making judgments about criminal behavior. There is no unique physiological reaction to deception."

Recent formal documentation of this comes from a National Research Council (NRC) blue ribbon panel appointed a year ago to examine the scientific validity of the polygraph for national security. Many psychologists served on the panel, including Paul Ekman, PhD, a longtime researcher of deception detection (see main article). The panel's report to NRC found no evidence of polygraph validity.

And theirs isn't the first scientific report to case doubt on the measure. In fact, due to such skepticism, the U.S. Supreme Court decided in a 1998 case involving military courts that a defendant did not have a right to introduce polygraph evidence. The Supreme Court decision cited scientific judgments about the accuracy of the test.

This decision, along with a 1988 law banning the use of polygraph tests of most employees, has led to a marked reduction in reliance on polygraph testing, notes Saxe. The ruling helped to dampen the tests' use in state and federal court, where the results are rarely accepted as evidence.