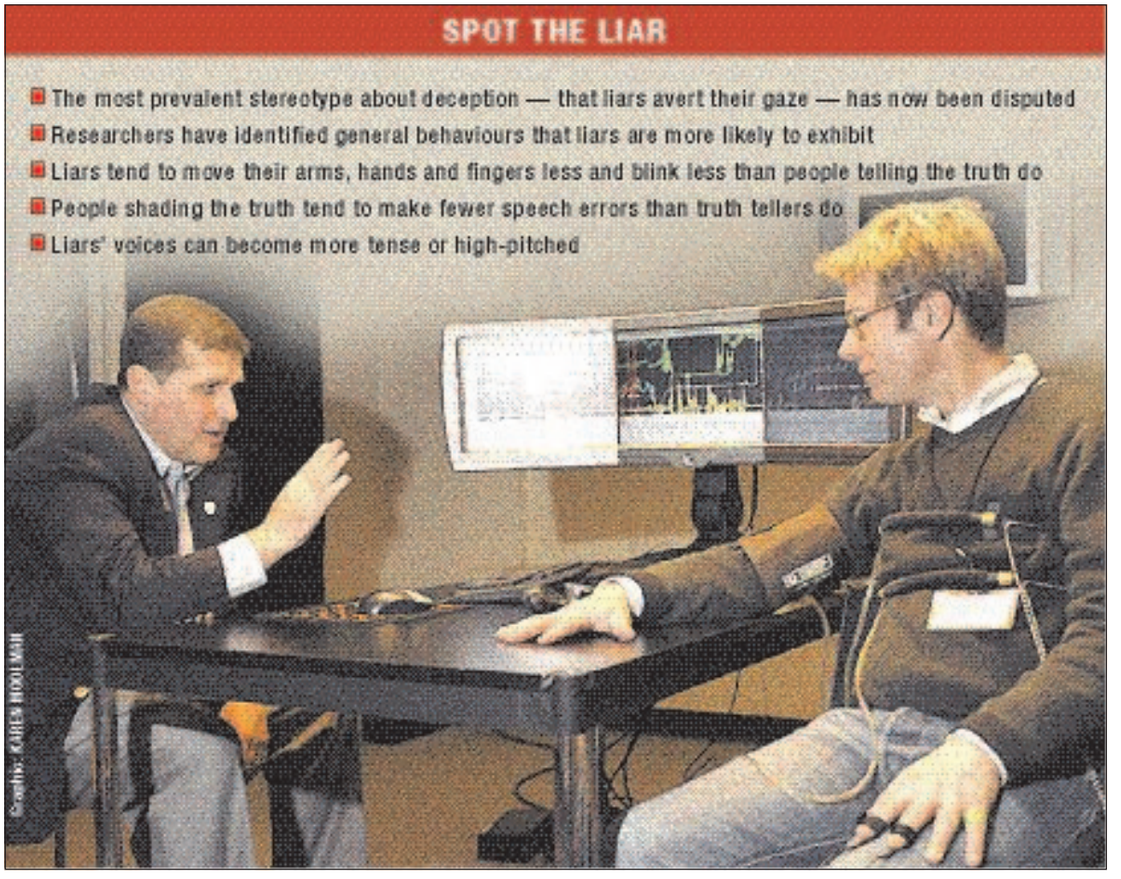
The tough challenge of lie detection



FORENSIC investigators are often confronted with the challenge of trying to determine whether a suspect is telling the truth or is telling a fib. This is one of the most challenging issues for forensic investigators and differentiates a successful investigator from an unsuccessful one.

The most prevalent stereotype about deception — that liars avert their gaze — has now been disputed after extensive forensic research carried out in Canada.

The stereotype had been developed after decades of psychological research showed that individuals were poor lie detectors and that liars don't shift around, touch their noses or avert their gaze any more than truth tellers do.

For several decades, psychologists have conducted most of their research in controlled laboratories to determine the differences between the behaviour of liars and people telling the truth. Current researchers are moving away from the controlled laboratory conditions to real life environments to better reflect the situations faced by a possible liar.

Researchers have identified general behaviours that liars are more likely to exhibit than people telling the truth. Liars tend to move their arms, hands and fingers less and blink less than people telling the truth do, and liars' voices can become more tense or high-pitched.

The extra effort needed to remember what they've already said and to keep their stories consistent may cause liars to restrain their movements and fill their speech with pauses.

But not all liars display these signals and one can't conclude that people are lying just because they don't move their arms or pause while telling their story.

These can be natural behaviour patterns for the individual and not necessarily signs of lying. These indicators are reliable indicators of deception but can't be used on their own to determine whether a person is a liar or not.

The problem for forensic investigators is complicated further in that people are generally not very good at identifying correct deception signals. Several studies have shown that normal people can only distinguish correctly between truths and lies about 55% of the time and this is only slightly better than chance.

Recent researchers have started to move their focus to actual suspects in police interrogation rooms to assess individuals in real life situations. The problem facing researchers is that they often don't know whether the suspects are telling the truth or not.

The challenge has been overcome by researchers reviewing police recorded video tapes of suspects charged with arson and murder who told the truth and lied about their involvement in those crimes. The researchers used forensic evidence, witness accounts and the suspect's eventual confession to determine the actual events and then correlated their findings.

Before learning the police conclusions, the researchers analysed the video tapes for the suspects' non-verbal reactions to questioning such as gaze aversion, blinking and hand-and-arm movements. They also assessed verbal clues such as pauses in speech and speech disturbances, such as stutters and incomplete sentences.

The outcome of correlation is that the differences between lying and telling the truth are individual. Some suspects looked away more while lying than while telling the truth and others increased their degree of eye contact.

The only general difference found between liars and people telling the truth is that liars blinked less frequently and paused longer while speaking.

NEW research conducted at the Forensic Psychology Lab at Dalhousie University in Canada has determined that the human face will betray the deceiver's true emotion, but not in the stereotypical ways. The research is the first comprehensive study of the secrets revealed by the human face for four of the universal emotions: happiness, sadness, disgust and fear.

Their extensive research has shown that a liar's face will give them away by briefly displaying their true emotion. We now also know that there are some muscles in our face that we can't control and those muscles won't be activated in the absence of genuine emotion.

Research participants were requested to view images that ranged from happy (puppies playing) to fearful (a close-up of open-mouthed rabid dog) and disgusting (a severed hand), and were instructed to respond with genuine or deceptive emotional expressions. (For example, they would be directed to smile when viewing the severed-hand photo.)

Their reactions were watched and judged by other volunteer observers who could not see the corresponding images, and recorded on video. The 697 emotion clips were exhaustively analysed frame by frame for more than 100 000 frames.

The researchers were able to discern rare "microexpressions", flashes of true emotion that show briefly, from one-fifth to one-twenty fifth of a second, on the faces of participants when instructed to deceive.

Forensic investigators now know that if you see a "microexpression" on a suspect that you have to probe the individual with specific questions to determine the reason for the deception.

The new research has shown that a better understanding of facial analysis, coupled with frame-by-frame analysis of the suspect's facial expression, will provide forensic investigators with further evidence of a suspect's deception. But the research also shows that the facial analysis must be conducted with video analysis to correctly identify deception from an inconsistent emotional expression.

The research has shown that in the absence of video analysis, observers were incorrect 40,24% of the time. Forensic investigators can now include a new tool in their arsenal to identify liars.

Peter Allwright
Edward Nathan Sonnenbergs