

By: [Gina White](#), Science Editor

## [How to Detect a Liar](#)

### *It's in his/her face*

You may think you're a naturally born lie detector, but in fact you're just checking people for stereotype behavior that can easily deceive you. A new research carried out by a team led by Dr. Stephen Porter's Forensic Psychology Lab at the Dalhousie University and published in the *Psychological Science* reveals that the face will always tell a liar's real emotion. Forget about the rolling of the eyes or the sweating. "The face and its musculature are so complex - so much more complex than anywhere else in our external bodies. There are some muscles in the face you can't control... and those muscles won't be activated in the absence of genuine emotion - you just can't do it," said co-author Leanne ten Brinke, a graduate student in experimental psychology. "If someone is telling a really important lie in which the consequences are dire, say life imprisonment, the lie will be revealed anyway. Because unlike body language, you can't monitor or completely control what's going on on your face," Porter added. This comprehensive research investigated how human faces betray real feelings when subjects experimented four universal emotions: happiness, sadness, disgust and fear. In fact, the study tested a hypothesis emitted by Charles Darwin in 1872: certain facial actions are out of our control, since they express genuine emotion. "A man when moderately angry, or even when enraged, may command the movements of his body, but... those muscles of the face which are least obedient to the will, will sometimes alone betray a slight and passing emotion," wrote Darwin in "The Expression of Emotions in Man and Animals". The adults subject to this new research watched images whose outcomes varied from happy (puppies playing) to fearful (a close-up of an open-mouthed rabid dog) and disgusting (a severed hand). They had to react with genuine or deceptive facial expressions. (For example, smiling when watching the severed-hand image). Their facial expressions were assessed by other subjects, who did not know the corresponding images, and recorded on video. 697 emotion clips were investigated frame by frame, which means there were over 100,000 frames. None of the subjects could perfectly fake emotions. Abnormal expressions, like smirking or rapid blinking in a face that should have been sad, were the most easily detected by the others as lie attempts. Disgust or fear appeared to be much harder to be hidden when compared to happiness. The team detected "microexpressions," short flashes of true emotion, lasting 0.04-0.2 seconds on the faces of the lying subjects. "The facial expression appears to crack and another emotion leaks on the face, however briefly," said ten Brinke. Most flashes of inconsistent emotion usually emerged in either the upper or lower face only. The team also found meaningless muscle twitches to occur and even in the case of genuine expressions, sometimes their correct interpretation can be delivered only by asking the right questions. This research is of high importance, due to the difficulty of detecting liars, a thing that is hard to do even for people specially trained for this. "There are all kinds of potential applications for this research, from our daily lives to settings like police interrogations, security checks in airports and courtrooms. We're just so sick of being lied to," said Porter. The team is already investigating over 60 videos of real-life important court cases from Canada, the United States, Britain and Australia.