New airport security screening method more than 20 times as successful at detecting deception

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Airport security agents using a new conversation-based screening method caught mock airline passengers with deceptive cover stories more than 20 times as often as agents who used the traditional method of examining body language for suspicious signs, according to new research published by the American Psychological Association.

In experiments spanning eight months, security agents at eight international airports in Europe detected dishonesty in 66 percent of the deceptive mock passengers using the new screening method, compared to just 3 percent for agents who observed signs thought to be associated with deception, including lack of eye contact, fidgeting and nervousness. The suspicious-signs screening method is widely used in airports in the United States, United Kingdom and many other countries, even though it has not been proven to be effective in laboratory or real-life settings, said researcher Thomas Ormerod, PhD, head of the School of Psychology at the University of Sussex in England.

"The suspicious-signs method almost completely fails in detecting deception," Ormerod said. "In addition, it costs a lot of money, absorbs a lot of time and gives people a false sense of security."

The new Controlled Cognitive Engagement method (CCE), which is based on previous laboratory studies, had the highest rate of deception detection in the first large-scale study of screening methods conducted in

a real-life airport setting. This could have important implications for thwarting terrorist attacks and catching other criminals, according to the research. The study, which was funded in part by the British government, was published in APA's *Journal of Experimental Psychology: General*. Ormerod previously worked with the British government to improve security at athletic venues during the 2012 London Olympics.

"The U.K. government gave us a challenge that if we didn't think the current airport screening method worked well, then we should come up with a better one," said Ormerod, who conducted the research with Coral Dando, PhD, a psychology professor at the University of Wolverhampton and former London police officer.

In the CCE method, security agents engage in friendly, informal conversation by asking passengers seemingly unrelated and unpredictable questions about knowledge the passenger should possess. The agent then gauges whether a passenger's responses become more evasive or erratic. "If you're a regular passenger, you're just chatting about the thing you know the best—yourself," Ormerod said. "It shouldn't feel like an interrogation."

In one example, an agent might ask a passenger the name of his high school principal and the travel time to his destination. It didn't matter if the agents knew the truthful answers to the questions because they were examining verbal cues from the passenger, such as shorter and more evasive responses to straightforward questions, Ormerod said.

In the study, 79 security agents received one week of classroom training in the CCE method, followed by a week of on-the-job training. A control group of 83 agents received no additional training. The lessons covered myths about deception detection and ways to build rapport and gather information from passengers. The bulk of the research occurred

at Heathrow Airport outside London, with other screening experiments conducted at two other British airports (Gatwick and Manchester) and airports in Paris, Amsterdam, Frankfurt, Zurich and Milan.

Researchers recruited 204 mock passengers (113 male, 91 female), including college acting students and undercover police detectives. Participants were paid 60 pounds (approximately $97) to participate, along with an additional 60 pounds if they avoided detection by security agents. Each mock passenger had a week to research a different deceptive cover story so he or she would be more convincing when questioned. For example, one recruit was instructed to say he was a telecommunications engineer traveling from England to Chicago for an international amateur fencing competition.

The mock passengers had realistic tickets and joined genuine passengers in security lines, where their screenings were recorded. If a mock passenger was caught, he or she was flagged in a computer system for further questioning at the gate, but all mock passengers turned around after passing through security and left the airport. A control group included 204 genuine passengers (113 male, 91 female) who were asked after their screenings if the recordings could be used in the research.

The CCE technique requires greater focus by security agents, who must think of different questions in each interview, rather than repeating scripted questions about luggage or travel plans in the suspicious-signs method that could be rehearsed by criminals seeking to avoid detection, the study noted. The risk of racial profiling also is reduced with the CCE method because it is applied in the same way to all passengers, unlike the suspicious-signs method, which is based on observation of physical characteristics, Ormerod said.

The average screening time was the same for agents using CCE or the suspicious-signs method, but agents using the CCE method asked fewer

questions, with both genuine and mock passengers speaking at greater length to them. But mock passengers gradually spoke less and revealed less information as they were asked more questions that might reveal their deception.

Screening agents trained in the CCE method improved in their ability to catch deceptive mock passengers during the study, increasing from 60 percent during the first month to 72 percent in the sixth month. The agents in the suspicious-signs group, however, performed worse over time, dropping from 6 percent in the first month to zero in the sixth month.

Even though it isn't effective, the suspicious-signs method is frequently used because it is cheap to train, and it "accords with people's folk beliefs about detecting deception," Ormerod said.

"When we can tell when our kids or spouses are lying, we think that those sorts of signs are going to work with everyone, but people lie differently," he said. "You can't assign one particular behavioral sign as a sign of lying. It's how someone's behavior changes during questioning that reveals deception."

The CCE method also could be used by detectives, court officials and other "professional lie catchers," the study noted. Ormerod and Dando are working with British police departments on adapting the screening method to monitor sex offenders on probation or parole. The method also may be used to uncover insurance and tax fraud and to catch job applicants who lie about their qualifications or employment history, he said.

More information: "Finding a Needle in a Haystack: Towards a Psychologically Informed Method for Aviation Security Screening," Thomas C. Ormerod, PhD, University of Sussex, and Coral J. Dando,

PhD, University of Wolverhampton; *Journal of Experimental Psychology: General*; online Nov. 4, 2014.