



START

Cues to Catching Deception in Interviews: A Brief Overview

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National Consortium for the Study of Terrorism and Responses to Terrorism
*A Department of Homeland Security Science and Technology Center of Excellence
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About This Report

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About START

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No man has a good enough memory to make a successful liar.

- Abraham Lincoln¹

Introduction

In the field of terrorism research, the task of collecting empirical data by interviewing terrorists, former terrorists, and other extremists presents a host of serious methodological dilemmas. One obvious challenge understood by researchers and law enforcement officials alike is the possibility that the interviewee will attempt to engage in deception, which many fear is more acute in this context than in many other social domains. Whether in the form of misrepresentation of facts, selective recall, or outright lying, such deception may deeply hinder a researcher's analysis and skew his or her conclusions. Therefore, how does one detect and respond to deception in an interview?

Traditionally accepted indicators of lying, such as gaze aversion, fidgety hands or feet, vocal stress, and body posture, in fact only weakly correlate with deception.² Training in such behavioral detection techniques has rarely led practitioners to exceed 50% accuracy in lie detection;³ even if training increases their level of confidence, practitioners rarely outperform non-trained individuals in their lie-detection capabilities.⁴

Certain researchers, on the other hand, offer more complex methods claiming accuracy rates of 90% or higher.^{5,6} Regardless, the most current research reflects the recurring theme that "no one verbal cue indicates deception, but the probability of deception increases when clusters of deceptive indicators are present."⁷ Moreover, practitioners who learn to watch for these combinations and interactions of deception cues have been known to significantly increase their accuracy in detecting deception.

¹"Abraham Lincoln quotes." (n.d.) *Thinkexist.com*. Retrieved from http://thinkexist.com/quotation/no_man_has_a_good_enough_memory_to_be_a/220993.html.

²Matsumoto, D., Hwang, H. S., Skinner, L., & Frank, M. (2011, June). Evaluating truthfulness and detecting deception. *FBI Law Enforcement Bulletin*. Retrieved from http://www.fbi.gov/stats-services/publications/law-enforcement-bulletin/june_2011/school_violence.

³Levine, T. R., Feeley, T. H., McCornack, S. A., Hughes, M., & Harms, C. M. (2005). Testing the effects of nonverbal behavior training on accuracy in deception detection with the inclusion of a bogus training control group. *Western Journal of Communication* 69 (3), 203-217. Retrieved from http://www.communicationcache.com/uploads/1/0/8/8/10887248/testing_the_effects_of_nonverbal_behavior_training_on_accuracy_in_deception_detection_with_the_inclusion_of_a_bogus_training_control_group.pdf

⁴Vrij, A. & Granhag, P.A. (2012) Eliciting cues to deception and truth: What matters are the questions asked. *Journal of Applied Research in Memory and Cognition* 1 (2), 110-117. Retrieved from <http://www.sciencedirect.com/science/article/pii/S2211368112000320>

⁵Matsumoto, D., Hwang, H. S., Skinner, L., & Frank, M. (2011, June). Evaluating truthfulness and detecting deception. *FBI Law Enforcement Bulletin*. Retrieved from http://www.fbi.gov/stats-services/publications/law-enforcement-bulletin/june_2011/school_violence.

⁶Meservy, T. O, Jensen, M. L., Kruse, W. J., Burgoon, J. K., & Nunamaker Jr., J. F. (2008). Automatic extraction of deceptive behavioral cues from video. In H. Chen, E. Reid, J. Sinai, A. Silke, & B. Ganor (Eds.), *Terrorism informatics: Knowledge management and data mining for homeland security, Vol. 18* (495-516). New York: Springer Science and Business Media, LLC. Retrieved from <http://www.springerlink.com/content/v846354672676120/fulltext.pdf>

⁷Schafer, J. R. (2010). *Psychological narrative analysis: A professional method to detect deception in written and oral communications*. Springfield, IL: Charles C Thomas Publisher, Ltd.

The following survey of recent research from psychology, criminology, and terrorism studies is intended as a primer to better equip terrorism researchers to gather truth and reduce misinformation in their research. The tools and recommended techniques have been formulated for deception detection in an interview setting; other factors may come into play in assessing written, oral, or video recordings emanating from extremists.

Nonverbal Cues

Matsumoto et al. identified five behavioral areas that provide cues to deceit: facial expressions, gestures, body language, voice, and verbal style.⁸ The first behavioral area is directly linked with identifying and interpreting microexpressions. Microexpressions (e.g. of fear, anger, joy, etc.) are small indicators of otherwise suppressed emotion which may appear unconsciously on a person's face for a duration as brief as 1/25th of a second.⁹ A few microexpression examples and their correlating emotions include: 1) false smiles, indicated by a lack of bagged skin under the eyes and/or the absence of crow's feet wrinkles; 2) anger, indicated by lowered eyebrows; and 3) fear, indicated by raised eyebrows.¹⁰ An "alert observer will be able to detect such a facial expression" unless the observer blinks at the exact moment the microexpression appears.¹¹ For example, students at the FBI National Academy and the U.S. Coast Guard have been trained to recognize the occurrence of microexpressions at a real-time rate of more than 70% and 80%, respectively.¹²

Other research has looked beyond facial movements to other regions of the body. For example, liars often suppress "nervous" behaviors when lying, partly because the individual may self-consciously try to control movement and partly because lying may create a greater cognitive burden than telling the truth. When one concentrates on a complicated task, other movements frequently cease, particularly motions of the feet, legs, hands, and fingers.¹³ Other possible bodily indicators of deception include compressed lips, chin withdrawal, and ventral denial (turning the front of the body away from the speaker), among many other signs of bodily discomfort.¹⁴

Meservy et al. used the observations of head and hand interactions to detect deception, citing a correlation between deception and various movements. In his study, researchers videotaped participants and analyzed frames to examine the relationship between hand movements and the distance from one's head. Certain nonverbal indicators of nervousness and possible deception cues highlighted in this study include rubbing, scratching, or preening around the head. This method of deception detection had a

⁸ Matsumoto, D., Hwang, H. S., Skinner, L., & Frank, M. (2011, June). Evaluating truthfulness and detecting deception. *FBI Law Enforcement Bulletin*. Retrieved from http://www.fbi.gov/stats-services/publications/law-enforcement-bulletin/june_2011/school_violence.

⁹ Vrij, A. (1999). Interviewing to detect deception. In A. Memon & R. Bull (Eds.), *Handbook of the psychology of interviewing* (317-326). pp. 321. New York: J. Wiley.

¹⁰ Ibid.

¹¹ Ibid.

¹² Matsumoto, D., Hwang, H. S., Skinner, L., & Frank, M. (2011, June). Evaluating truthfulness and detecting deception. *FBI Law Enforcement Bulletin*. Retrieved from http://www.fbi.gov/stats-services/publications/law-enforcement-bulletin/june_2011/school_violence.

¹³ Vrij, A. (1999). Interviewing to detect deception. In A. Memon & R. Bull (Eds.), *Handbook of the psychology of interviewing* (317-326). pp. 320. New York: J. Wiley.

¹⁴ Navarro, J. (2010, November 3). Opportunities to detect deception in a forensic setting. *Psychology Today*. Retrieved from <http://www.psychologytoday.com/blog/spycatcher/201011/opportunities-detect-deception-in-forensic-setting>

reported accuracy rate of 95.2%; however the study is only preliminary and still requires further in-depth analysis.¹⁵

Verbal Cues

If one is forced to rely only on either nonverbal or verbal cues for detection, verbal cues are generally recognized as the more reliable indicator. There is a stronger positive relationship between deceptive detection accuracy and vocal cues such as speech errors, speech fillers, pauses, and voice tone.¹⁶ The more attentive the listener, the more effective a detector he will be.

Detection of verbal cues is especially important when conducting an interview remotely, such as by phone. In this case it is crucial for the interviewer to establish a baseline of the interviewee's verbal speech pattern on neutral topics.¹⁷

As the interview progresses, the interviewer should be wary of repeated clusters of deviations from the baseline pattern. Typical deceptive indicators include speech stumbles, increased pauses between answers or sentences, filler words such as "umm," "ahh," and "uh huh" before responding to a question, and stalling for time by answering a question with a question or by asking the speaker to repeat the question.¹⁸ In the case of an evasive answer, a useful technique may be to ask for clarification with direct "yes" or "no" questions. If the interviewee pauses before answering,¹⁹ continues to avoid giving a direct answer, or begins an answer with the word "well,"²⁰ the probability of deception increases. Clusters of these verbal cues indicate an increased probability of deception, although all indicators are more likely to be relevant when compared with the subject's verbal and nonverbal baseline.

Word Clues

People decisively select words when speaking or writing; by analyzing the choices of these words (or "word clues"), the "probability of predicting the behavioral characteristics of people" may increase.²¹ In the sentence "I walked quickly," the use of the word "quickly" could indicate that the speaker is late for a certain event.²² This could possibly indicate conscientiousness and reliability; additionally, this could indicate a tendency to respect the norms of society and to care about the expectations of others. As a cautionary note, word clues are not by any means a definitive indicator; in this example, the use of

¹⁵ Meservy, T. O., Jensen, M. L., Kruse, W. J., Burgoon, J. K., & Nunamaker Jr., J. F. (2008). Automatic extraction of deceptive behavioral cues from video. In H. Chen, E. Reid, J. Sinai, A. Silke, & B. Ganor (Eds.), *Terrorism informatics: Knowledge management and data mining for homeland security, Vol. 18* (495-516). New York: Springer Science and Business Media, LLC. Retrieved from <http://www.springerlink.com/content/v846354672676120/fulltext.pdf>

¹⁶ Vrij, A., Granhag, P. A., & Porter, S. (2010). Pitfalls and Opportunities in Nonverbal and Verbal Lie Detection. *Psychological Science in the Public Interest*, 11(3), 89–121. pp. 103. Retrieved from http://www.psychologicalscience.org/journals/pspi/pspi_10_6.pdf

¹⁷ J. R. Schafer (2012, January 13). Detecting deception over the telephone. *Psychology Today*. Retrieved from <http://www.psychologytoday.com/blog/let-their-words-do-the-talking/201201/detecting-deception-over-the-telephone>.

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Ibid.

²¹ J. R. Schafer (2011, June 17). Reading people by the words they speak: Word Clues present a noninvasive technique to effectively read people. *Psychology Today*. Retrieved from <http://www.psychologytoday.com/blog/let-their-words-do-the-talking/201106/reading-people-the-words-they-speak>

²² Ibid.

“quickly” could be due to other reasons - perhaps the speaker had felt threatened or was simply walking to avoid the rain.

In the sentence “I worked hard to achieve my goal,” the use of “hard” indicates that the speaker values difficult goals. Additionally, “hard” could indicate that the person is able to defer gratification.²³ Another example of word cues can be seen in the sentence “I decided to buy that model.” The speaker’s choice to utilize the word “decided” shows that he evaluated the possible options before deciding; this also conveys that this is a person who “thinks things through.”²⁴ It is unlikely that the speaker is impulsive; an impulsive person would have likely said that he just bought that model. The use of “decided” is a possible indicator that the speaker tends towards introversion as an extrovert would more likely have been impulsive.²⁵

Word clues, while not an outright detector of deception, “provide insights into a person’s thought processes or behavioral characteristics”;²⁶ this could aid in detecting deviations from the norm when attempting to detect deception.

Maximizing Cues by Increasing Cognitive Overload

Cognitive overload occurs when the mental load of an individual becomes too large for the working memory, thus decreasing one’s performance of complex tasks. Maintaining a lie is cognitively more demanding than telling the truth; e.g. it is more difficult to maintain consistency and demonstrate detail in an imagined story. The mental strain posed by lying can lead to increased pauses between answers or sentences and speech stumbles. When liars are presented with complex questions, they tend to hesitate [more so than a truth teller] in order to give themselves time to formulate an appropriate answer.²⁷

Additionally, during an interview liars must inwardly suppress the truth²⁸ and may also outwardly monitor their movements in order to appear honest (e.g. maintaining eye contact and trying to avoid other traditional “giveaways”). The combination of these factors forces liars to utilize more cognitive resources than truth tellers in order to maintain their “story,” thus leaving them with fewer available cognitive resources and increasing their vulnerability. If cognitive demand is raised, liars may be unable to effectively cope with additional requests²⁹ and inadvertently reveal their deception.

An interviewer may manipulate this process to possibly detect deception, placing extra cognitive demand on the interviewee in order to increase the likelihood that noticeable verbal and nonverbal cues to deception will manifest. Some common cognitive stress/overload techniques include the reverse order strategy, asking unexpected questions, and establishing a high expectation of detail.

²³ Ibid.

²⁴ Ibid.

²⁵ Ibid.

²⁶ Ibid.

²⁷ Schafer, J. R. (2010). *Psychological narrative analysis: A professional method to detect deception in written and oral communications*. Springfield, IL: Charles C Thomas Publisher, Ltd.

²⁸ Leal, S., & Vrij, A. (2008). Blinking during and after lying. *Journal of Nonverbal Behavior* 32 (4), 187-194. pp. 188. Retrieved from <http://myweb.ncku.edu.tw/~p3896116/Blinking.pdf>

²⁹ Vrij, A., Granhag, P. A., & Porter, S. (2010). Pitfalls and Opportunities in Nonverbal and Verbal Lie Detection. *Psychological Science in the Public Interest*, 11(3), 89–121. pp. 109. Retrieved from http://www.psychologicalscience.org/journals/pspi/pspi_10_6.pdf

Reverse Order

The interviewer may ask the interviewee to describe events in reverse order. The effort required to maintain a consistent lie combined with the mentally-taxing task of describing it in reverse order should, in theory, make deceptive verbal and nonverbal cues more obvious and foster more opportunity for mistakes by the interviewee in the story's timeline. Describing an event in reverse increases cognitive load because "(a) it runs counter to the natural forward-order coding of sequentially occurring events ... and (b) it disrupts reconstructing events from a schema."³⁰

In a psychology deception study, for example, college student participants were interviewed by a police officer about a staged theft.³¹ The video-taped interviews, in which the reverse order strategy was utilized, were later played for police officers. The officers were able to detect lying 60% of the time compared to 42% of the time in the control condition (chronological order), consistent with the greater verbal and nonverbal cues determined to be present in the first group.³²

Unexpected Questions

Another method of increasing cognitive overload is by asking irrelevant questions.³³ A liar is less likely than a truth teller to answer irrelevant questions accurately and with ease because maintaining the fictional story causes other cognitive processes (e.g. the ability to quickly process and respond to unexpected questions) to become more difficult.

Relevant to revealing a person's true motivation, the devil's advocate approach was developed to detect deception in expressing opinions. An interviewer (after listening to the subject's opinion) might unexpectedly ask the person to argue against his stated personal view. "Playing devil's advocate," the interviewer might ask, "is there anything you can say against...?"

An example of this in practice would be an interviewer first asking a question that forces the interviewee to argue for his personal view - "What are your reasons for supporting the Americans in the war in Afghanistan?"³⁴ The interviewer then asks the interviewee to argue against his personal view - "Playing devil's advocate, is there anything you can say against the involvement of the Americans in Afghanistan?"³⁵ Generally, people will have given more thought to and will find it easier to generate reasons supporting their underlying beliefs rather than reasons opposing them.³⁶

³⁰ Ibid.

³¹ Vrij, A., Mann, S. A., Fisher, R. P., Leal, S., Milne, R., & Bull, R. (2008). Increasing cognitive load to facilitate lie detection: The benefit of recalling an event in reverse order. *Law and Human Behavior* 32(3), 253-265. pp. 260-261. Retrieved from <http://search.proquest.com/docview/204147760/fulltextPDF?accountid=14696#>

³² Vrij, A., Mann, S. A., Fisher, R. P., Leal, S., Milne, R., & Bull, R. (2008), op. cit., pp. 261.

³³ Vrij, A., Granhag, P. A., & Porter, S. (2010). Pitfalls and Opportunities in Nonverbal and Verbal Lie Detection. *Psychological Science in the Public Interest*, 11(3), 89-121. pp. 110. Retrieved from http://www.psychologicalscience.org/journals/pspi/pspi_10_6.pdf

³⁴ Vrij, A., Granhag, P. A., & Porter, S. (2010), op. cit., pp. 107-108.

³⁵ Ibid.

³⁶ Ibid.

Expectation of Detail

As stated, truth tellers are usually able to relate events in much greater detail and with greater plausibility than liars. Therefore, an interviewer may increase the observable differences between truth tellers and liars by establishing an expectation that the interviewee will offer a high level of detail. In this case, interview style plays an important role in encouraging interviewees to talk. Vrij et al. found that among police officers interviewing suspects, an accusatory interview style contained the fewest verbal cues to deceit, partly because it led suspects to make short denials.³⁷ Information-gathering interviews and behavior analysis interviews led to better results in lie detection.³⁸ In other words, a cooperative, truthful witness is more likely to give greater detail when speaking with an encouraging interviewer rather than one who appears neutral or suspicious.³⁹ Ostensibly, this expectation of detail will increase cognitive demand on liars trying to reach and maintain the higher standard.

Conclusion

Recent research on deception, while demonstrating improvements in detection accuracy, nonetheless highlights the difficulty and complexity of interpreting cues correctly. While verbal cues are independently more reliable, the presence of both types of cues increases the ability of the interviewer to assess deception, particularly when the cues are compared with an established baseline unique to each individual.

According to Matsumoto et. al., nonverbal cues, particularly microexpressions, are best at differentiating truth from falsehood when the consistency of nonverbal cues is compared with participants' verbal statements.⁴⁰ The same Matsumoto et al. study found that "inconsistent facial expressions combined with statement analysis annotations (i.e. an analysis of verbal cues) could correctly classify 90% of the participants in the videos regarding whether they lied or told the truth."⁴¹ The researchers concluded that when law enforcement officials or other interviewers detect inconsistent microexpressions, they should continue "to probe that particular statement" and then complete a statement analysis which notes, for example, the editing of adverbs and changes in noun and pronoun usage.⁴² Attention given to the interaction between verbal and nonverbal cues will yield the most accurate deception detection.

Depending on the circumstances, the interview could be recorded or even carried out as a team effort, with one person asking the questions and the other focused to a greater degree on observation.⁴³ Further, how an interviewer ought to respond to the suspected presence of deceit depends on the goals of the interview.

³⁷ Vrij, A., Mann, S., Kristen, S., & Fisher, R. P. (2007). Cues to deception and ability to detect lies as a function of police interview styles. *Law and Human Behavior* 31(5), 499-518. pp. 499. Retrieved from <http://www.springerlink.com/content/5360pp7222372qx3/fulltext.pdf>

³⁸ Vrij, A., Mann, S., Kristen, S., & Fisher, R. P. (2007), op. cit. pp. 510.

³⁹ Vrij, A. & Granhag, P.A. (2012) Eliciting cues to deception and truth: What matters are the questions asked. *Journal of Applied Research in Memory and Cognition* 1 (2), 110-117. Retrieved from <http://www.sciencedirect.com/science/article/pii/S2211368112000320>

⁴⁰ Matsumoto, D., Hwang, H. S., Skinner, L., & Frank, M. (2011, June). Evaluating truthfulness and detecting deception. *FBI Law Enforcement Bulletin*. Retrieved from http://www.fbi.gov/stats-services/publications/law-enforcement-bulletin/june_2011/school_violence.

⁴¹ Ibid.

⁴² Ibid.

⁴³ Ibid.

Again as a starting frame of reference, the most reliable way to obtain information is by making the interviewee comfortable enough to build trust in the interviewer⁴⁴ and to share his story in detail. However, if the interviewer identifies clusters of deception cues as the interview progresses, Vrij et al. recommend that the interviewer not reveal his suspicion immediately.⁴⁵ The interviewer should instead continue asking questions (which will force the interviewee to maintain “the story,” avoid self-contradictions, and remember his previous statements) and should ask for clarification.⁴⁶

Additionally, the interviewer can utilize techniques to increase cognitive overload. For the reader's convenience, a basic example of an interview applying the aforementioned strategies is reproduced as a chart in Figure 1. The red boxes offer some examples of previously-discussed deception cues that may occur at any time during the interview. The cues, however, may more strongly and observably manifest as the interviewer progresses through the four consecutive steps.

Like other deception detection methods such as polygraphs, interview deception cues, even in clusters, only indicate the probability of deception. There are several commercially available training tools that claim to provide training in increasing the accuracy of detecting deception.⁴⁷

Ultimately, though, determining whether an interviewee is seeking to deceive must be left to the judgment of the interviewer, and it is here that experience and awareness can play a key role. This brief overview of current research in this area will hopefully equip researchers with a basic awareness of these concepts and encourage the explicit incorporation of these concepts into research designs. Better detection of interview deception would invariably increase the quality of terrorism research.

⁴⁴ Dolnik, A. (2011). Conducting field research on terrorism: A brief primer. *Perspectives on Terrorism* 5(2): 3-32.

⁴⁵ Vrij, A. (1999). Interviewing to detect deception. In A. Memon & R. Bull (Eds.), *Handbook of the psychology of interviewing* (317-326). pp. 323. New York: J. Wiley.

⁴⁶ Ibid.

⁴⁷ Online microexpression training tools commercially available include MiX™, available from Humintell (humintell.com); and Dr. Paul Ekman's F.A.C.E. tools (face.paulekman.com). The authors have not scientifically evaluated any of these products and do not endorse their efficacy in any way."

Figure 1. Sample Interview Deception Detection Guide

