INTERROGATION:
A REVIEW OF THE SCIENCE

HIGH-VALUE DETAINEE INTERROGATION GROUP

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FOREWORD

THE HIGH-VALUE DETAINEE INTERROGATION GROUP

The High-Value Detainee Interrogation Group (HIG) is a specialized interagency interrogation capability that brings together intelligence professionals, subject matter experts, and an international and multi-disciplinary team of researchers. Since its creation in January 2010, the HIG has served as the locus for advancing the science and practice of interrogation within the United States government. To date, the HIG has commissioned a body of scientific research on interrogation that has resulted in more than 100 publications in peer-reviewed scientific journals. Equally important, this research has been incorporated into HIG best practices via a continuous cycle of research advising training, training informing operations, and operational experience identifying research gaps and updating training models.

SCOPE OF THE REPORT

The objective of this report is to provide a systematic review and evidence synthesis of the science related to interrogation. It is not intended as a manual or practitioners' guide.

The emerging science of interrogation relies on a variety of relevant disciplines and fields of study for its theoretical and scientific foundations, many of which have provided decades of data. For instance, research on interrogations in the criminal justice system has been steadily accumulating for decades, providing data on topics such as effective and ineffective interrogation and interview methods, the conditions under which victim, witness, and suspect memories are most vulnerable, valid cues to deception, and the conditions under which individuals confess to crimes they did not commit. During the same period, there has been an emergence and growth of science on negotiation and social influence, persuasion, resistance, priming and embodied cognition, and cognitive-based cues to deception. To the extent that this research is relevant to an interrogation, it is included in this report.

This report provides a comprehensive review of HIG-funded research and other science relevant to interrogations: assessing cooperation and countering resistance (Chapter 1), influencing tactics (Chapter 2), interview methods (Chapter 3), and detecting truth and deception (Chapter 4). Based on the comprehensive research and field validation studies detailed in this report, it is concluded that the most effective practices for eliciting accurate information and actionable intelligence are non-coercive, rapport-based, information-gathering interviewing and interrogation methods.

METHODOLOGY

The HIG supports research and development of an effective, science-based model of interrogation. To this end, the HIG Research Program commissions basic and applied science and field validation studies to rigorously examine current and new approaches to interrogation. Interdisciplinary and cross-domain in scope, researchers have devised novel experimental paradigms (e.g., mock terrorism scenarios, induced cheating paradigms and multiparty negotiations) to systematically evaluate existing and proposed interrogation techniques in real and/or simulated interrogation contexts. A majority of the findings discussed in this report arose from laboratory settings with a diverse population and methodology (e.g., surveys, in-depth interviews, and experimental manipulations), which allow for identification of cause and effect relationships. In contrast, field validation studies (e.g., analyses of actual interviews and interrogations recordings) allow assessment of the impact of the science-based methods in real-world settings. To the extent that field validation studies are available, they are included in this report. Together, the laboratory and field data provide complementary insights and best practices to be translated into training and operational environments.

Notably, some readers may observe that a majority of the field research cited has been conducted within law enforcement settings (e.g., field validation study of interrogations with the Federal Law

Enforcement Training Center [FLETC]) and assume, therefore, that the data and findings are not relevant to military/intelligence interrogations. However, the goal of collecting information is often true in criminal interrogations as well. The underlying processes of communication, decision-making, memory, cognition, and social dynamics are fundamentally the same in the law enforcement and intelligence gathering settings. There are fewer field data from intelligence contexts because there have been fewer opportunities to study interrogations in military/intelligence settings, especially since the implementation of DoD Instruction 3216.02, *Protection of Human Subjects and Adherence to Ethical Standards*, which prohibits any human subjects research involving detainees, including observational studies.

TERMINOLOGY

This report uses the terms "interrogation" and "interview" interchangeably and generally follows the Department of Defense definition of an interrogation to mean, "the systematic process of using approved interrogation approaches to question a captured or detained person to obtain reliable information to satisfy intelligence requirements, consistent with applicable law and policy" (AFM, 2006, 1-20). The subject of an interrogation is referred to as the "subject."

PROTECTIONS OF HUMAN SUBJECTS OF RESEARCH

The HIG conducts its mission consistent with domestic law and United States' obligations under international law, and the research program adheres to applicable U.S. government guidelines for scientific experimentation and the protection of human subjects in scientific research. The Federal Policy for the Protection of Human Subjects or "Common Rule" mandates that researchers abide by the principles of respect for persons, beneficence, and justice; these regulations have been adopted by federal agencies that conduct, support, or otherwise regulate human subject research.

PEER REVIEW PER OMB GUIDANCE M-05-03

An earlier draft of this report was peer-reviewed in a manner consistent with the requirements of the Office of Management and Budget's "Final Information Quality Bulletin for Peer Review" (M-05-03) issued December 16, 2004. These reviews are summarized in Appendix A.

AGENCY REVIEW

This report was reviewed by FBI, CIA, USD(I), DIA, USMC, and Army G2X.

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SUMMARY

The following is a list of current interrogation practices that are supported by the science described in this report. This list is not meant to be exhaustive or static, because effective practices will change as more research is available and as the transition from research to practice is evaluated, via field validation exercises of real-world interrogations. (Note 1) It should be noted that an interrogation is a dynamic event, and expert interrogators adapt to the situation while still pursuing their goals.

Prepare, plan, and support an interrogation as a multidisciplinary team.
All members of the team – which may include an analyst, an interpreter, a subject matter expert, as well as one or two interrogators – receive the same training on interrogation best practices. The team members who are not directly interacting with the subject observe the interrogation and provide feedback to the interrogator, especially about interpersonal dynamics between the subject and the interrogator.

Prepare for an interrogation in a manner that distinguishes hard facts from inferences.
Hard facts and inferences, together with intelligence requirements, are used to set long-term and short-term objectives, infer the subject's motivations, and predict likely responses to interrogation strategies.

Create a context conducive to a productive interaction.
The physical context of the room, what the interrogator wears, and the language he uses is strategically tailored so as to influence the subject to disclose information.

Manage first impressions.
The team hypothesizes what type of person the subject is most likely to respond to and develops a corresponding, but genuine, *brand* for the interrogator. The interrogator works with the team to develop the most effective opening remarks that communicate not only the interrogator's brand but also the purpose and potential outcomes of the interrogation.

Assess the level of resistance of the subject.
The team uses *sensemaking* to assess the level of cooperation, identify competition or avoidance on the part of the subject, and determine the motivations underlying how he talks – is he concerned about his relationship with the interrogator, about his own needs and identity, or does he want to engage in instrumental problem solving?

Counter any resistance the subject might show.
If a subject is refusing to engage, the interrogator uses persuasion tactics to draw the subject into the conversation, such as *self-affirmation*, *liking*, *social proof*, *reciprocity*, mild displays of *authority*, *self-disclosure*, and *commitment and consistency*. The interrogator might *reframe* the interaction by engaging in mutual storytelling, *acknowledge the resistance*, use a *foot-in-the-door technique*, or imply a *scarcity* of time.

Develop and maintain rapport.
The interrogator deliberately encourages a sense of *autonomy* in the subject to make him feel less coerced and, thus, more likely to cooperate; the interrogator displays *acceptance* and *empathy* for the subject, and *draws out* his values and beliefs, adapting these strategies to the needs of the subject. Rapport is maintained throughout the interrogation and can be assessed as the degree of *mutual attention* and *coordination* between the subject and the interrogator.

Use active listening skills.
Active listening skills include *encouragers*, paraphrasing, or summarizing what the subject has said at critical moments, *mirroring* language and posture, reflections, *emotional labeling*, and appropriate use of silence.

Elicit narratives using open-ended questioning techniques.
The interrogator explains to the subject that the narrative is his (and not the interrogator's). This reinforces autonomy and avoids an interrogator focusing too explicitly on intelligence requirements. Focusing too intently on requirements may cause the interrogator to miss information unexpectedly shared by the subject. Information is elicited by the interrogator asking the subject to "tell," "explain," or "describe" something about a topic. The interrogator does not interrupt and allows for silence as the narrative proceeds.

Provide assistance to recall of memories.
The interrogator may ask the subject to close his eyes or look away, in order to reduce distraction and facilitate memory recall. He may ask the subject to mentally *reinstate the context* in which an event occurred and report on temporal, auditory, and spatial details (e.g., by asking, "What did you hear? What did you see? What did you smell? How did you feel?"). He may ask the subject to tell the story in the *reverse order* or from a *different perspective*.

Be aware of both the interrogator's and the subject's positive and negative interpersonal behaviors.
The interrogator engages in positive interpersonal behaviors: he adapts to the flow of the interrogation, sets the agenda and is appropriately (and alternately) frank and forthright, confident and assertive, supportive, social and warm, respectful and trusting, humble and seeking advice, or reserved and wary. He avoids negative interpersonal behaviors such as being argumentative, demanding and rigid, parental and patronizing, over-familiar, uncertain and hesitant, weak and submissive, passive and resentful, or attacking and punishing. He looks for positive interpersonal behaviors in the subject and pulls the subject away from engaging in negative interpersonal behaviors.

Use funnel strategies of questioning.
The interrogator drives toward specific objectives by first asking open-ended questions ("tell," "explain," "describe") about the broad domain within which the objective is contained. This is then followed by probing questions, which become increasingly narrow, with the interrogator inserting clarifying questions as needed. Once the objective is reached, the interrogator gradually moves the conversation away from the objective and transitions to another topic so as to minimize the importance of the objective for the subject.

Elicit information by telling stories.
In instances where the interrogator has some information about an issue of concern, he maintains a friendly demeanor and engages in storytelling with the subject, reflecting back to the subject information about the particular topic. The interrogator asks no direct questions, but uses *confirmation* or *disconfirmation* to elicit additional details from the subject, without the subject realizing that he provided any information.

The interrogation team is aware of cross-cultural differences in communication styles.
Misunderstanding is avoided by the interrogation team being sensitive to cross-cultural differences in *orientation dialogue*, *relational dialogue*, *problem solving dialogue*, and *resolution* frames. In some countries, both parties are most comfortable engaging in mutual problem solving from the outset of an interrogation; in others, the relationship between the interrogator and the subject must first be established and honored.

The interrogator encourages the subject to provide highly detailed responses.
Because the subject often expects to be asked "yes" or "no" questions, the interrogator demonstrates the level of detail he wants by playing a *model statement*; i.e., a 2-minute, previously recorded auditory narrative about an event entirely unrelated to the event of concern to the interrogator. He explains that this is the level of detail he is asking for. The team assesses how well the subject can provide details and whether the details he provides are *verifiable*. The team also assesses whether there are parts of an account that are more detailed than others, and looks for complications and spontaneous corrections in the subject's narrative.

Strategically frame evidence or information.
The interrogation team carefully evaluates any evidence or information it has about a particular topic in terms of its *source* and its *specificity* in terms of a 2 x 2 matrix of low-to-high specificity on one dimension, and vague-to-precise source(s) on the other dimension.

Strategically introduce evidence or information.
Without revealing the evidence or information, the interrogator asks the subject to provide a free narrative about a particular topic. He then asks the subject to repeat the same narrative and follows with specific questions in order to pin the subject down to his exact version of the event he is describing. Once such details are elicited, the interrogator introduces a piece of evidence or information (in terms of a vague source and low specificity) and asks the subject to explain it. The interrogator then introduces the evidence or information with a greater precision in terms of source and a higher degree of specificity, and again asks the subject to explain it. The interrogation team makes notes of the subject's within-statement and between-statement inconsistencies.

The interrogator asks unanticipated questions.
Subjects may prepare for an interrogation by guessing what questions they will be asked and making up what they think will be appropriate answers. An interrogator disrupts this strategy when he asks questions that are unlikely to have been anticipated – but which could be answered if the subject is telling the truth. One unanticipated question is to request the subject "draw what he saw" when present at the event in question. The team assesses the level of detail, the presence of people, and the perspective of the drawing. Another unanticipated question is to ask about the *planning* of an event, rather than about the event itself.

Fixed Choice Tests are used to detect concealed knowledge.
Fixed Choice Tests are used to reveal knowledge that a subject is trying to hide or to reveal shared knowledge a group of individuals is trying to hide.

The interrogation team is aware of cross-cultural differences in signs of deception.
The team is aware of obstacles to detecting deception such as cross-cultural differences in *deference to authority*, *storytelling*, *resistance*, *face saving*, provision of *autobiographical* and *contextual* details, *interpersonal coordination*, and limitations related to *accessing memories in a second language.*

Work in partnership with interpreters.
Interpreters often have cultural as well as language expertise. As part of the team, they are trained on interrogation best practices and can anticipate, facilitate, and/or not interfere with specific tactics an interrogator might deploy. They are part of the preparation and planning for each interrogation session. The team recognizes that when an interpreter is part of the interrogation, the conversation is a three-way exchange, and the interpreter, interrogation and subject are situated in such a manner that the exchange occurs as naturally as possible.

The team strategically concludes one interrogation session to facilitate the next.
Ending an interrogation session is part of the planning and preparation process. The interrogator summarizes what the subject has said, allowing the subject the autonomy to correct or expand on this summary. The interrogator provides a roadmap for future sessions.

The interrogation session is video- or audio-recorded.
Analysis of the recorded session is used by the team in preparation for the next session and as a source for report writing. The narrative of the subject is analyzed using text analysis tools that may indicate deception and/or psychological states.

CHAPTER 1: ASSESSING COOPERATION AND COUNTERING RESISTANCE

One of the first tasks of an interrogator is to assess the level of cooperation and resistance of the subject. The three-dimensional Cylindrical Model of *sensemaking* provides a way to understand a subject's resistance and a method to make a resistant subject more cooperative. The Cylindrical Model is based on research that shows successful negotiations and interrogations can be understood in terms of the extent to which the interrogator and subject are 'in sync;' that is, how they align their dialogue over the course of the interaction. The framework of the Cylindrical Model and research on resistance and counter-resistance provides a roadmap for transitioning a subject being resistant to being cooperative.

Sensemaking

Sensemaking within an interrogation context provides a framework for understanding the subject's resistance and what motivates them to engage or not.[i] Sensemaking is similar to situational awareness [*5*] but also includes bringing expertise to understand situations that have not been encountered before [*6*]. Sensemaking is an attribute of 'the good stranger,' a U.S. military term used to describe military personnel who are adept at gaining cooperation from civilians who might otherwise be antagonistic or mistrustful.[ii]

Communication theorists have organized bargaining and negotiating behaviors along an *orientation* continuum that ranges from *cooperative* to *antagonistic (competitive)* to *avoidant* [*8*]. In the Cylindrical Model, this continuum is the vertical dimension of the model (see Figure 1). The extent to which the orientation continuum adequately encompasses communication between two people depends on multiple factors, including culture [*9*], individual differences [e.g., *10*], and power differentials [e.g., *11*].

Communication within each level of the orientation continuum may be differently *motivated*: e.g., negotiating may be motivated to maximize gain and *instrumentally* solve a problem [*12*], by the need to develop and manipulate the *relationship* between the two parties [*13,14*], or by the need of each interactant to establish their personal and social *identity* [*15*]. As shown in the Cylindrical Model in Figure 1, motivation is represented on a horizontal axis with each motivation occurring within each orientation level. *Instrumental motives* have been the focus of the bulk of the research in conflict resolution, with the strong influence of game theory [*16*]. *Relational motives* occur when the goal is not to solve a problem or resolve a conflict as much as to shape the affiliation and interdependence between the parties [*17*]. The *identity motive* includes what otherwise has been referred to as *face*, defined as an individual's sense of positive image in the context of social interaction [*18*]; the importance of identity varies by culture [*19*].

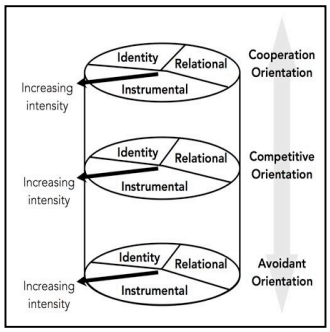

Figure 1. The Cylindrical Model, representing language between an interrogator and a subject during an interrogation. Taken from Taylor [*20*].

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[i] Resistance to interrogation varies. Research on why suspects confess has found that about 50% of subsequently convicted criminals were ambivalent about what they would admit to at the start of their interrogation [*1-4*]. These same data showed that 16% claim they planned to deny their crime; 33% to 44% planned to admit or confess to a crime and then changed their minds during their interrogation, and 32% who had planned not to admit or confess ended up confessing.

[ii] In 2012, the U.S. Department of Defense enabled researchers to video or audio record San Francisco Police Department officers' interactions with members of the public. The team wanted to examine the interaction skills the officers used to "make sense of and orient toward unfamiliar people, relationships, and social settings." This program was called 'Good Stranger' [*7*].

Taylor [*20*] argues that rather than focusing only on tactics, an interrogator should listen to what a subject is saying and determine where his discourse and the subject's discourse fits within the Model over the course of the interaction [*18*, *21-24*]. This will provide both insight into the nature of resistance, if any, and a method of moving the subject from resistance to cooperation.[iii] A description of each motivational frame within each orientation follows:

- *Avoidance – Identity:* the subject directly attempts to deny involvement or knowledge, challenges the basis for the interrogation, faults the interrogator and denies responsibility.[iv]
- *Avoidance – Relational:* the subject continually interrupts with negative or uncaring responses, is submissive, or withdraws and is apathetic. The subject displays little interest in the interrogator's concerns or his own. These interactions reveal low degrees of affiliation and trust [*25*].
- *Avoidance – Instrumental:* the subject shifts the conversation to another topic, retracts previous statements, or is completely unresponsive.
- *Competitive – Identity*: the subject insults and criticizes the interrogator, expresses commitment to his own position or exaggerated views of himself.
- *Competitive – Relational*: the subject excuses previous or future actions; he engages in profanity as a means of asserting power and dominance.
- *Competitive – Instrumental*: the subject makes antagonistic, immoderate demands or rejects demands; he rejects the interrogator's offers and provides alternatives favorable to himself; he threatens to punish the interrogator for failing to concede.
- *Cooperative – Identity*: the subject directs attempts to enhance the interrogator's esteem through uncritical agreement or compliments; displays empathy and reassurances about personal benefits and reveals personal information about himself or apologizes for previous actions.
- *Cooperative – Relational*: the subject expresses confidence in the interrogator's ability, while offering reassurances and promises about his own behaviors. Humor may be used to indirectly communicate a common understanding of the issues.
- *Cooperative – Instrumental*: the subject makes statements that openly provide information, accepts losses in order to jointly agree to or accept a demand, or expresses compromise or makes a promise.

Intensity is the third dimension of the Cylindrical Model. Intense language might include highly emotional threats (Competitive/Instrumental) or strongly provoke the other to take some aversive action (Avoidant/Identity). High intensity dialogue reflects emotion [*26*], rigidity [*27*] and personal concern [*28*]. Intense language has been shown to reduce the likelihood of a successful outcome in high-stakes situations [*29*]. This suggests that low intensity behaviors may be more flexible and that it may be strategic on the part of an interrogator to reduce the intensity of his interactions with the subject [*24*].

Successful negotiations and interrogations can be understood in terms of the *extent to which the interactants align their framing of dialogue – i.e., are in the same motivational 'frame' within the Cylinder – over the course of the interaction* [*6,24*]. For example, transcripts from nine hostage incidents collected from several U.S. police forces were analyzed at the level of utterances[v] identified in terms of the frames of the Model. Negotiators and hostage-takers shifted frames across time. Frame matching was found in an average of 8.89 consecutive utterances, with sequences of three or more equivalently framed utterances occurring in 78% of the nine negotiations. Negotiations that ended unsuccessfully showed a small, gradual decrease in the length of synchronous framing over time, while those that ended

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[iii] The Cylindrical Model also provides an interrogation team with a language to describe what is happening during an interrogation in real time, which is useful for coaching, analysis, feedback and long-term review.

[iv] The examples given here are of a subject's behaviors within each frame. However, they could just as well have been examples of an interrogator's behaviors. The point is that these orientations and motivations are descriptive of the behaviors of *both* parties.

[v] Utterance was defined as the single utterance of one party without interruption by the other party.

successfully showed an increase in synchrony over time. The critical alignment was in motivational goal (i.e., Identity/Relational/Instrumental): motivational alignment increase over time was more than four times the alignment decrease found in the unsuccessful negotiations. Synchrony in the early stages of the negotiation significantly affected synchrony in the later stages, thus also affecting the success of the negotiation [*6*]. In order to understand how early framing affected later sensemaking, dialogue where negotiators and hostage-takers were not in alignment (which was 22% of the total exchange) was examined at transitional periods during which the negotiators appeared to be seeking a common frame. This analysis showed that negotiators typically adopted a less dominant role during these transitional periods, switched their framing to match the hostage-taker's, and reduced the average length of their utterances, thereby giving the hostage-taker a greater role in the exchange at those transition points.

Research has shown that sensemaking occurs not only via the high level synchrony described above but also at a more basic coordination of language at lexical (word/vocabulary), syntactic (phrase/clause), and semantic (meaning/message) levels [*18*]. In multiparty negotiations, for example, group members show greater convergence in language as they move towards agreement and divergence when they move apart [*30*]. Cooperation appears to be a function not of the use of common nouns and verbs, but of the use of what are called *function* words, which are articles, auxiliary verbs, and pronouns outside of our awareness and conscious control [*31,32*].[vi] The synchronized use of function words is called *Language Style Matching* (LSM), and several studies have shown a positive relationship between LSM and cooperation [*34,35*]. Taylor and Thomas [*36*] analyzed a sample of audio-recorded hostage crisis incidents from several U.S. police departments. Via cross-validation with third-party accounts and newspaper reports, four negotiations were categorized as successful and five as unsuccessful. Each was divided into six phases to capture matching across time both at the conversational level (measured by LSM during each phase of the negotiation) and at the utterance level. Successful negotiations were characterized by matching function words as well as positive emotions, social concerns, and the use of cognitive mechanisms that were almost ten times greater than for unsuccessful negotiations. LSM significantly fluctuated over the course of the unsuccessful negotiations, whereas successful negotiators were able to maintain constant levels of coordination.

A similar LSM analysis of 64 police interrogations demonstrated that interrogations containing a confession showed overall higher rates of suspects matching the language style of the interrogators than those without a confession [*37*]. There also was a divergence in the type of matching that occurred across the interrogation session: in instances of confessions, interrogator-led matching increased in a linear fashion, whereas for those that ended without a confession, there was a linear increase in suspect-led matching.

Resistance and Counter-Resistance

From the perspective of the Cylindrical Model, the ideal frame for a subject to be in is most likely *Cooperative/Instrumental*: It is here that the subject provides information of interest to an interrogator such as the who/what/where/when/how of a past or future event. What are the interrogator behaviors most likely to move a subject into a Cooperative frame? Obviously, simple orientation frame matching is not sufficient; being avoidant or competitive while interacting with an avoidant or competitive subject is

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[vi] Research on patients with brain damage shows that content words and function words are processed in different parts of the brain [*33*]. Function words are social by their very nature. "Consider the sentence: *He placed it on the table*. The words *placed* and *table* are standard content words that have shared meaning for most English speakers. The words *he, it, on*, and *the*, however, are style (function) words that are essentially place holders that only have specific meaning for the speaker and the audience. Who is *he* and what is *it*? The speaker and those listening presumably know, but anyone not privy to the conversation cannot. The fact that it is *the* table as opposed to *a* table further assumes that it is a specific table in question that, again, the rest of us are unable to identify. Function words, then, demand social knowledge and skill to understand and use" [*32, p. 551*].

likely to lead to conflict spiraling. Research shows that interrogator flexibility is critical [*38,39*], and that negotiators who align with subjects on motivational goals (i.e., Identity/Relational/Instrumental) rather than orientation (i.e., Avoidant/ Competitive/ Cooperative) are more likely to gain concessions [*40*].

The Cylindrical Model predicts that getting to cooperative from avoidant requires first becoming somewhat competitive [*20*]; perhaps some form of competitive exchange or challenge can pull a subject out of refusing to even engage or respond to the interrogator. The Model also predicts that getting a subject to move from one frame to another works best by reducing the intensity of the interaction and by the interrogator being first in an adjacent frame rather than in the frame that is the ultimate goal; simultaneous changes in both orientation and motivational goal are unlikely [*20*].

A body of research on resistance and counter-resistance strategies provides some strategies an interrogator might consider when he encounters an avoidant subject (note that for each, the interrogator is matching the subject's motivational frame):

- *Avoidance – Identity:* the interrogator raises the subject's self-esteem. A key motivator of resistance is the need to protect the self-concept from threat and change [*44*]. This proposition is consistent with a wealth of empirical data demonstrating the critical importance of self-perceptions, values and attitudes [*45*]. *Self-affirmations* mitigate defensive processing and biased source evaluations [*46*]. This might be accomplished by making the subject 'the expert' [*47*].
- *Avoidance – Relational:* the interrogator redefines the relationship. For example, rather than being an interrogation, the exchange is characterized as a conversation with both parties being in a long-term relationship [*48,49*]. The relationship also might be depersonalized; for example, the need for information comes from 'the commander' rather than the interrogator [*50*]. *Storytelling* is another tactic: a carefully crafted story might mirror the subject's plight (making the interrogator a kind of 'third party' to the situation) and describe a path forward. Narratives are especially useful in challenging strong attitudes [*51,52*] because they overcome biased processing [*53*] and they are not perceived to be attempts at persuasion [*54*]. In a story, there are no specific arguments to refute, the listener may suspend disbelief and be emotionally drawn into the narrative. The story may be prefaced with a claim of supporting the subject's position but might then take an extreme and possibly objectionable position; this is the so-called Marc Antony gambit.[vii]
- *Avoidance – Instrumental:* the interrogator deploys one or more sales tactics:
    - He might use the *foot-in-the door* technique, asking for something that appears trivial to the subject. Research shows that once a person has complied with a small request, he may be more likely to comply with a larger demand [*55,56*].[viii] Such behavior follows from attribution theory [*58*], which proposes that self-attributions are often determined by observations of one's own behavior and the situational context in which it occurs. When someone agrees with a request (without being forced to do so), the person attributes the giving to factors within himself (["He may become, in his own eyes, the kind of person who does this sort of thing" [*55, p. 201*]). This new perception of the self then mediates behaviors in subsequent situations.
    - The interrogator might *reframe* the risks associated with not cooperating or the gains associated with cooperating. A common reframing tactic used in criminal interrogations is to define and limit suspects' perceptions of the set of available choices (e.g., to redefine

[vii] After helping to assassinate Caesar, Shakespeare's Marc Antony began his narrative with "I come to bury Caesar, not to praise him" because he knew the Roman audience greatly disliked the dead emperor; as the story shows, however, Antony proceeds to sing his praises [*54*].

[viii] Sometimes referred to as "give them an inch, they'll take a mile." When the behavior requested initially is the actual target behavior, and the manipulation is to change the cost of carrying out such behavior (such as a car salesman 'lowering' the price of a car), the tactic is referred to as the low-ball technique [*57*].

the nature of the interrogation from facilitating a subject's conviction or investigating guilt to a situation where guilt is already established and the interrogation is an opportunity for the suspect to explain himself) [*59*]. It should be noted, however, that such reframing has been shown to increase the risk of false confessions [*60,61*].

- The interrogator might *acknowledge the resistance*. Labeling and making the role of resistance overt may to some degree make it less influential [*62,63*]. A calm, confident interviewer might claim that "resistance is futile" but normal, an expected part of a custodial interview [*64*], and simply wait for it to decrease with time.
- The interrogator might offer an *alternative-choice double bind*; both alternatives lead to essentially the same outcome, but the subject feels self-affirmed in the act of making a choice [*65,66*].

CHAPTER 2: INFLUENCING STRATEGIES

An interrogator can influence a subject to move out of an Avoidant frame and into a Cooperative frame by communicating within the same motivational frame and employing tactics that reduce resistance, such as those described above. Another strategy is to make himself more attractive to the subject. Counter-resistance tactics reduce resistance; social influence tactics increase attractiveness. The following sections describe various social influence strategies.

Persuasion

Reciprocity. When a small favor is given (without asking for something in return), the favor creates a relationship and engages the norm of reciprocity, a felt obligation to return the favor [*1,2*]. Reciprocity is a tactic that can be instrumental (such as giving water or food), identity-based (such as showing honor and respect) or relational-based (such as showing empathy). There are numerous and extensive laboratory and field experiments showing the power of reciprocity [*3-11*]. Reciprocity is one of the most frequently reported tactics of experienced interrogators who deal with high-value detainees [*12-14*]. The number of concessions a negotiator makes has been shown to be reflected in the number of concessions his counterpart makes [*2,15,16*].

Reciprocity has been proposed as a universal social norm [*1*]. Anthropologists studying hunter-gatherer tribes have described reciprocal altruism among members of a variety of societies [*17,18*]. The tribal members of the Kékch'i Mayans of Belize helped other members with farming corn and dry rice as a reciprocal relationship. Similarly, the Aché hunter-gatherers of Paraguay display specific reciprocal relationships in food sharing between different families. Arguments have been made that reciprocity and trusting others to reciprocate are the cornerstones of a successful society [*19-21*]. It is important to note here that, in some instances, a gift may produce *reactance* in the receiver: that is, a felt pressure to return the favor that threatens the receiver's sense of choice. In such instances, the receiver may be less likely to reciprocate [*4*]. The important factor appears to be whether the receiver feels that his sense of choice or freedom to act as he wishes is constrained by the gift.

Incentives. An incentive is a very powerful influencer [*22,23*]. A large body of research has shown how to make incentives more effective (e.g., by manipulating the rate and amount of incentives, as well as via *incentive contrast*,[i] all of which moderate the effectiveness of incentives [*24,25*]). A caveat to the use of incentives is that rewarding a behavior that is already occurring removes feelings of competence and self-determination, which will discourage the behavior that is being rewarded [for a review, see *26*]. For example, if a subject is rewarded for providing information that was being provided already, the reward will disincentivize providing further information.

Research has shown that the explicit offer of leniency or a deal increases true confessions but also false confessions, which is problematic [*27*]. The U.S. Supreme Court has ruled that implied promises of leniency must be considered as part of the totality of circumstances in determining a confession's admissibility [for reviews, see *28-30*]. Confessions elicited by direct promises are usually excluded by the courts; however, those that are implicit are not always excluded [*31-35*].

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[i] Incentive contrast is observed when incentive levels change. For example, being rewarded with $2 is *more* meaningful if the expectation (or prior reward) had been $1; whereas, being rewarded with $2 is *less* meaningful if the expectation (or prior reward) had been $3.

Increase the perception of credibility and expertise. Being perceived as expert and/or trustworthy on a topic is a powerful persuasive tactic [*36,37*], especially when the subject is unable or unmotivated to process persuasive information [*38*]. Appearing to be in authority via appearance or job title will also influence compliance [*5,39*]. A note of caution: as was demonstrated in both the Milgram experiments [*39*] and the Stanford Prison Experiment [*40*], the use of authority as a persuasion tactic can lead to compliance rather than cooperation.[ii]

Provide consensus information. People are acutely sensitive to social consensus information – that is, to what they believe others think or believe [*41-49*]. A powerful influence tactic, also known as *social proof*, is to assure someone that others think and act in the same way [*50*] or that an individual might wish to change their thinking to match that expressed or exhibited by a relevant reference group [*5*].

Engage processes of commitment and consistency. The salesperson's foot-in-the-door tactic[iii] [*51*] works because people strive for consistency between their attitudes or beliefs and their behaviors [*46,52*]. In order to preserve such consistency, people comply with requests that are aligned with their beliefs, values and existing commitments, especially when these are personal choices and often despite being presented with new information to the contrary [*5*]. There is some evidence that this tendency is greater among members of individualistic cultures [e.g., the U.S.] than among members of more collectivist cultures [e.g., Asia] [*53*]. Individuals in collectivist cultures might be more sensitive to information about compliance histories of other in-group members [that is, to use social proof] [*54*].

Positivity/Liking. Liking is established by finding similarities with the subject [*5,55*]. Establishing common ground is a means to both influence [*56*] and build relationships [*57*]; liking is increased by similarity and similarity increases liking [*55,58,59*]. The similarities can be meaningful ones, such as shared interests, identity, or attitudes – or they may be almost trivial; studies with American undergraduates have shown that even superficial or incidental similarities can have an impact, such as sharing a birthday [*60*], academic major [*61*], or university [*62*]. Liking also is influenced by attractiveness, flattery, cooperation, comparison with others, and behavioral *mimicry* [*63*]. A survey of 120 experienced interrogators from five Asia-Pacific jurisdictions found that liking (and reciprocity) were the two most often-reported interrogation tactics [*14*]. A caveat: although people tend to believe flattery and like those who provide it [*64,65*], ingratiation can backfire when it is clear that the flattery is a manipulation to achieve other goals [*66*].

Self-disclosure. Self-disclosure may be used to both establish similarities and, independently, increase liking [*67*]. A meta-analysis of self-disclosure studies [*57*] showed that people disclose more to those whom they initially like, and people like others as a result of having disclosed to them. A 'getting-to-know-you' phase of disclosure has been shown to increase the number of agreements reached in simulated negotiations [*68,69*]. Congruity between self-disclosure on the part of both parties is important: if a witness perceives an investigator's self-disclosures as atypical or awkward, the positive effects can be negligible or even backfire [*70,71*]. There is a limited amount of research showing that the reciprocity between self-disclosure and liking is cross-cultural [*72,73*], although self-disclosure has been found to be

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[ii] This is a key distinction because the level of obedience experienced within compliance can lead a subject to provide information he doesn't actually possess and/or confirm the interrogator's premises even if he possesses contradictory information. Compliance as an end state of interrogation is therefore inconsistent with the evidence-based, rapport-building, information-gathering model described in this report.

[iii] The foot-in-the-door tactic is when agreeing with a small request increases the likelihood of agreeing to a second, larger request.

less likely among Asian Americans with a high concern for *face*[iv] [*74*].

Contrast and scarcity as force multipliers. Humans (and other organisms) are uniquely tuned to *contrast*; that is, to differences and changes of state. *Contrast* can serve to enhance the efficacy of influence and counter-resistance strategies. Many influence tactics rely on some kind of contrast, including the foot-in-the-door technique [*51*], the *door-in-the-face technique* [*2*], the *that's-not-all technique* [*76*] and the *low-ball technique* [*77*]. Requesting something smaller after requesting something larger [creating contrast] enhances compliance, and this holds true independently of the level of the initial request [*78,79*]. The contrast can be subtle: in one study, people were more likely to purchase a 75-cent cupcake with a free cookie than they were to purchase a cupcake and cookie in combination for 75 cents [*76*].

Scarcity. Scarcity as an influence tactic is based on contrast: If an individual believes that there is a limited opportunity to take an action, he is more likely to act [*80,81*]. Scarcity increases the efficacy of social consensus: an item is desirable and scarce because other people want it. Scarcity has been used in time-limited offers of more favorable outcomes for subjects who admit or confess to a crime [*82-84*]; although, when used in this manner, there is the risk of compliance rather than cooperation.

Rapport

Although rapport is a substantive part of discourse about interrogation among both intelligence and law enforcement communities, most of the research on rapport has been conducted within therapeutic contexts. Within therapeutic contexts it has been defined as a constant and interactive process of establishing a harmonious, empathetic, or sympathetic connection to the other in order to facilitate an exchange of information between the two parties [*85*].

An influential theoretical model of rapport (derived from meta-analysis of scientific studies in the counseling domain) proposes that rapport consists of three components, communicated primarily via nonverbal channels [*86-88*]. The components are not assumed to be mutually exclusive.

As applied within interrogation contexts [*89,90*], these might be described as:

- *Mutual attention*: the degree of involvement of subject and interrogator, signaled by immediacy behaviors such as directly facing each other, nodding, and assuming a relaxed posture [*91*]. It is important to note here that these nonverbal behaviors have strong cultural rules; comfortable and acceptable interpersonal space and degree of eye contact both have been shown to be age, gender, and culturally dependent [*92-95*].
- *Coordination*: the degree to which the behaviors of the subject and interrogator are in synchrony, indicated by complementarity, accommodation, convergence, or *mimicry*. Mimicry [which is nonconscious] occurs when some aspects of the speech patterns, facial expressions, postures, gestures, and mannerisms of two interacting individuals match [*96,97*].[v]
    - Mimicry impacts occur across cultures: When Chinese-Canadian study participants mimicked European-Chinese participants in a 'getting to know you' conversation, mimicked participants subsequently reported a greater interest in Chinese culture; similar outcomes were obtained when Mexican-American participants mimicked non-Hispanic participants [*98;* see also *99*].
- *Positivity:* expressed by smiling, eye contact, and a generally pleasant demeanor.

[iv] Face concern refers to an individual's set of socially sanctioned claims concerning their social character and social integrity in which this set of claims is largely defined by certain prescribed roles that the individual carries out as a member of a certain social or reference group [*75*].

[v] *Mirroring* is essentially the same as mimicry, although sometimes the term 'mirroring' is reserved for the nonconscious aspect of adjusting one's behavior to another, whereas mimicry may be used strategically as an influence tactic [*98*].

Rapport in practice. While widely recognized as playing a central role in successful interviewing, definitions of rapport among intelligence officers and law enforcement vary. A senior intelligence officer and scholar described rapport as "operational accord: the state in which a degree of accord, conformity, and or/affinity is present within a relationship. Operational accord seeks to effectively, albeit subtly, gain the source's cooperation and maintain that productive relationship for as long as possible without betraying indicators of manipulation or exploitation on the part of the interrogator" [*100, p. 102 - 3*]. A forensic psychologist with the Behavioral Science Unit of the Sûreté du Québec explained that rapport is "a balance between what we desire and what the other agrees to" [*101, p. 91*] and described it as "the heart of the interview" [*102, p.104*]. The AFM 2-22.3 describes rapport as "a relationship in which the HUMINT collector presents a realistic persona designed to evoke cooperation from the source" [*103, p. 8-4*]. Across intelligence and law enforcement communities, rapport is consistently recognized as the most important aspect of a successful interview [*12-14,89-91,100-128*]. Rapport (measured variously) has been shown to increase the amount of information provided by sources or informants, increase trust, and produce cooperation [*91,129-138*].

The importance of rapport to a successful interrogation is evident across cultures. Interrogators and investigators from the Indonesian Republic National Police, including the Special Forces Counter-Terrorism squad, the Philippine National Police, the Intelligence Services of the Armed Forces of the Philippines, the Sri Lanka Police, and the Sri Lanka Intelligence Service all endorsed rapport-building strategies [*139*]. In the words of a Sri Lankan interrogator:

> *"You listen, so you know that there's a relationship built, and it's a human bond. Even with the terrorists, or whoever – it's that human bond"* [*139, p. 22*].

Similar findings were reported in interviews of investigators and intelligence officers from the Australian Defense Forces, the Indonesia Republic National Police Special Detachment 88, the Norwegian Police Service, the New South Wales Police Force Joint Counter-Terrorism Team, the Armed Forces of the Philippines, and the Sri Lanka Police Service and State Intelligence Service [*14*]. Rapport was considered part of what they referred to as the "social strategies" of an interview, which also included reciprocity and *procedural justice*.

Rapport building. Behaviors experienced interrogators believe to be important to rapport building are treating the subject kindly and humanely, finding commonalities, getting the subject to talk, and the use of incentives such as special foods. Behaviors believed to be least effective towards building rapport are described as being disingenuous, confrontational, and "trying too hard to be someone's buddy" [*140, p. 851*]. Just as there is no agreed-upon operational definition of rapport, researchers have found no consensus among practitioners about how to establish or maintain it in an investigative interview.

Objective measures of rapport. Numerous observational studies, based primarily on analyses of video records, have provided support for the proposition that rapport increases the likelihood of a successful interview outcome:

- Rapport, operationally defined as 'takes time to ensure working relationship is established, and throughout interview keeps communicating effectively,' was observed to correlate significantly with interviews that showed a moderate to complete shift towards confession across the course of the interview in an analysis of 85 interviews with suspects of benefit fraud [*141*].
- An analysis of video records of interrogations from the Los Angeles Police Department provided a detailed account of tactics used across the sessions [*142*]. Defining rapport as a "working relationship between interrogator and suspect," rapport behaviors on the part of the interrogator were observed at the beginning of the interrogations for both sessions that ended in admissions and sessions that ended in denials, and, for both, rapport behaviors dropped towards the middle of

the sessions. However, rapport behaviors increased for those sessions that ended in admissions whereas rapport behaviors remained low for those that ended in denials.

- Japanese police officers who self-reported rapport (empathetic understanding and perspective taking) more often got full confessions in the murder, rape and robbery suspect interviews than those officers that did not [*143*].

In a highly innovative adaptation of therapeutic strategies to interrogations, a team of U.K. researchers [*144*] used the principles and strategies of *Motivational Interviewing* to describe rapport-based interrogation techniques as they occurred in video-recorded interviews of U.K. terrorism suspects.[vi] Pointing out that both Motivational Interviewing-based therapy and police interviewing seek to "establish an empathetic, respectful, and nonjudgmental atmosphere ... and to maintain a flexible but goal directed strategy throughout the interaction" [*144, p. 412*], the research team analyzed 418 audio- and video-recordings (288 hours of footage) of police interviews with 29 terrorism suspects who subsequently were convicted of terrorism-related offenses. A coding manual was developed to assess the quality of interpersonal interactions between interviewers and suspects as well as the amount of useful intelligence and evidence generated (yield was measured in terms of capability to commit the offense, opportunity, motive, and details about people locations, actions and times related to the offense). The interpersonal interactions were described in terms of rapport-building skills and "Interpersonal Behavior Circles" [*144, p. 416*].[vii] Rapport-building skills were scored in terms of reflective listening, rapport and resistance, providing summaries, developing discrepancies, and five scales related to Motivational Interviewing (acceptance, empathy, interpersonal competence composed of adaptation and evocation, and autonomy). These constructs were defined as:

- *Reflective listening.* The ability to accurately reflect something the suspect has said to encourage further discussion and clarification.
- *Rapport and resistance.* The ability to develop rapport and respond to resistance without judgment.
- *Summaries.* Summaries are a particular kind of reflection where the information or views are discussed and fed back to the suspect to check understanding and clarification.
- *Discrepancies.* Discrepancies are those elements of the suspect's account that are inconsistent. This may be a factual discrepancy or they may be discrepant with the values and beliefs expressed by the suspect. These can be developed by the interviewer to elicit additional information. For example, "You said that you were very close to Alex and that he was a really important person in your life but you also said you haven't seen each other, phoned or had any sort of contact for the last nine months. Can you tell me why that is?" [*144, p. 417*].
- *Acceptance.* Acceptance is showing unconditional positive regard.

[vi] Motivational Interviewing is a "client-centered, directive method of enhancing intrinsic motivation to change by exploring and resolving ambivalence" [*145, p. 25*]. The strategy evolved from clinical experience in the treatment of problem drinking, but the principles and procedures were expanded on by Miller and Rolnick [*145,146*] to apply to a wider range of the treatment of health behaviors, including drug abuse [*147*] and sex offending [*148*]. Motivational Interviewing is based on principles of social psychology and self-determination theory [*149*]. A key underlying assumption is the *autonomy* of the client: it is his responsibility to decide whether or not to change his behavior. Autonomy has been found to be associated with intrinsic motivation [*150,151*], persistence [*152*], and goal attainment [*153*]; deprivation of autonomy needs has a variety of detrimental consequences, such as apathy and alienation [*149*]. The Motivational Interviewing-based therapist provides direction by expressions of empathy, developing discrepancies between what the client is doing at present and his core values, rolling with resistance (that is, not arguing with the client, which will only produce greater resistance), and supporting self-efficacy [*154*]. Systematic reviews of Motivational Interviewing to change behaviors, particularly those involving the abuse of alcohol and other drugs, have shown the method to be reasonably consistent and robust [*155,156*].

[vii] Interpersonal Behavior Circles are described in Chapter 3 of this report.

- *Empathy.* The extent to which the interviewer understands the suspect's perspective and relays this to the suspect.
- *Adaptation.* The extent to which the interviewer adapts his responses to the suspect's narrative and manages a fluid interview format.
- *Evocation.* When the interviewer is able to draw out the beliefs and views of the suspect. An evocative prompt might be, "how did you feel about that?"
- *Autonomy.* When the interviewer presents information in such a way that the suspect can choose to respond without losing face; their choice to cooperate is emphasized. Perceiving oneself as autonomous has been shown to be important to being receptive to others' point of view [e.g.,*157*].

Structural equation modeling[viii] of the relationship of instances of the above-referenced behaviors and information yield showed a strong effect of Motivational Interviewing techniques to increase interview yield. This increase occurred both as a direct effect and as an indirect effect by increasing adaptive interviewer tactics and decreasing maladaptive interviewer tactics [*144*]. Motivational Interviewing techniques also decreased some counter-interrogation tactics (refusing to look at interviewers, offering monosyllabic responses, claiming no memory, discussing unrelated materials, offering information already known, talking in terms of scripts, and offering "no comment").[ix] Unexpectedly, Motivational Interviewing techniques were associated with an increase in the strategy of retracting previous statements [*158*].[x]

Subjective measures of rapport. The experience of the subject may not always be what the interviewer claims. While police officers may rate themselves as 'skilled,' analyses of taped interviews with suspects have shown that the police are sometimes deficient in rapport building [*159*]. An analysis of 161 recorded suspect interviews found initial rapport building only in 3% of the interviews [*160*]. Interviews of 30 people who had been questioned following detention for alleged terrorist-related activities showed that, in comparison with reports from interrogators (of whom 85% reported *using* social justice strategies which included reciprocity, rapport, and elements of *procedural justice*], only 25% of the 'detainees' reported *experiencing* such strategies in their interviews with the police [*14*].

There are a few instances of assessing rapport from the perspective of the subject. Murderers and sexual offenders report that they more often denied an allegation if the interviewer assumed a dominating attitude, and less often denied an allegation if the officer had been perceived to adopt a humanizing approach, characterized by rapport and relationship building [*161,* see also *162*]. The primary reason convicted confessors to child molestation gave for confessing was the respect shown to them by the interviewers; of those who did not make any admissions but were found guilty, many said it was because of demeaning or coercive demeanors on the part of their interrogations [*163*]. A shortened version of the Working Alliance Inventory-Short Revised (WAI-SR] [*164*] was used to assess rapport as perceived by 126 Belgium suspects interviewed for a variety of offenses [*165*].[xi] Scores on the WAI-SR were a

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[viii] Structural Equation Modeling (SEM) is a family of statistical methods designed to test a conceptual or theoretical model (e.g., factor analysis, path analysis and regression).

[ix] Counter-interrogation strategies and interrogation resistance techniques are described in AFM 8-77 and Appendix E.

[x] Statistical (principal component) analysis of the counter-interrogation tactics showed that they clustered into passive (refusing to look at interviewers, remaining silent); passive verbal (monosyllabic responses, claiming lack of memory); verbal (discussing an unrelated topic, providing well-known information, providing a scripted response) with two single item components: retraction of previous statements and no comment. Irish paramilitary suspects (Ulster Volunteer Force, Ulster Defense Association, Provisional Irish Republican Army and the Real Irish Army) used more passive, verbal and no comment tactics than right wing (neo-fascist, neo-Nazi and racist groups) and international (al Qaeda-inspired) terrorists, whereas international terrorists made more use of retraction tactics than suspects in the other two groups [*158*].

[xi] The *Working Alliance Inventory* [*167*] was constructed to assess the quality of client-therapist relationships or

significant predictor of satisfaction regarding the police interviewer and the procedure. Self-report questionnaires completed by investigators and subjects sometimes disagreed, however, about perceptions of the interview style and the degree of working alliance [*166*].

Interviews of suspects who had been interviewed by police or intelligence services in the Philippines, Indonesia, and Sri Lanka confirmed the power of rapport-based approaches. These subjects advised that:

> *"…interviewers must not be harsh. They must be soft-spoken because people tend to be persuaded by soft-speaking people"* (Filipino suspect), and "*Interrogators should ask questions without harming their minds and their hearts. There are so many affected, so many people who are not engaged with those activities, so they should respect everyone"* (a Sri Lankan suspect) [*138, p. 22*].

Procedural justice within the criminal justice system has been described as "the way in which police treat citizens and the fairness of the decisions made" [*173, p. 246*]. Research on procedural justice provides insight into the experiences of those who are the subjects (and sometimes, victims) of criminal justice procedures and processes, and as such, is relevant to interviewers' efforts at rapport building and perspective taking.[xii] (Note 2)

Priming

Priming is an influence strategy that operates exclusively at the nonconscious level [*185,186*]. Experiments in social cognition have shown that when subjects are presented with a word or group of words (the *prime*), followed quickly by a target letter string that the subject has to name or classify, naming or classifying the target is faster when the prime is semantically related to the target [*188-193*].[xiii] Such priming has been shown to last hours or longer [*194*]. For example, researchers asked study participants to unscramble sentences containing words related to the concept of rude or polite. Those exposed to the rudeness-related words were more likely to subsequently interrupt a conversation conducted by the researcher compared to those exposed to the politeness primes; the subjects expressed no awareness of this manipulation [*195*]. Other studies have demonstrated that priming can affect cooperation with others [*186,* see also 196] and support for specific political positions [*197,198*].

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alliance, which was defined as what "makes it possible for the patient to accept and follow treatment faithfully" [*168, p. 2*]. This alliance was proposed to consist of three components: *tasks* (in-counseling behaviors and cognitions that form the substance of the counseling process), mutually endorsed and valued *goals*, and *bonds* that are a complex network of positive personal attachment between the therapist and client. The 36 items on the Working Alliance Inventory assess the progress the client feels in regard to tasks, goals and bonds. For example, tasks are assessed by "I am clear on what my responsibilities are in therapy" and "I feel that the things I do in therapy will help me to accomplish the changes that I want;" goals are assessed by items such as "we agree on what is important for me to work on" and "the goals of these sessions are important to me." Bonds are assessed with items such as "[The therapist] and I understand each other," and "I believe [the therapist] likes me." The Working Alliance Inventory has predicted therapy outcomes [*169,170*], and has been revised and updated [*171*] as well as used in settings other than those described here [*172*].

[xii] Perspective taking, defined as the cognitive capacity to consider the world from the others' viewpoints, allows an individual to anticipate the behaviors of others [*174*]. Perspective taking is not easy: people often rely too heavily on their own (accessible) self-knowledge [*175*] and fail to adjust to how the perspectives of others differ from their own [*176*]. The context of an interview discourages perspective taking: Perspective taking is easier with people we are close to and perceive as similar to ourselves rather than with strangers [*177*] or dissimilar others [*178,179*], and more difficult when under pressure to respond quickly [*180*]. Members of individualistic cultures (such as the American culture) are disadvantaged for perspective taking [*181,182*], as are those in high-power roles [*183,184*].

[xiii] For example, study participants in a *conceptual priming experiment* might be given a set of target words to read e.g., estate. . . weight . . . knitting . . . apple . . . pastry. Pre-exposure to the list of target words makes it more likely that the subject will recall those words when they are presented with a list of associated words: real . . . light . . . wool . . . juice . . .dough [*187, p. 790*].

In a novel application of priming to information collection, researchers asked study participants to engage in plotting a mock eco-terrorism attack, after which they were interrogated about details of the planning (location, target, etc.) [*199*]. The participants were cautioned that they should reveal as much as possible about the plot, but if they revealed too much, the interviewer might become suspicious and keep them for further interviews. After being given time to prepare for the interview, half the participants were *primed* by asking them to reflect for two minutes on a relationship they had with someone they trusted, felt secure with, and confided in. This part of the study was based on previous research showing that priming secure attachments makes people more social [*200*] as well as kinder, warmer, and more cooperative [*201*]. Semi-structured interviews about the ecoterrorism plot followed. Analyses of the details provided by the 'suspects' showed that the primed participants provided significantly more overall details than those that were not primed. In addition, independent observers rated the primed participants as more forthcoming (that is, on a 7-point continuous scale, from 1 being 'extremely withholding' to 7 being 'disclosing everything they could remember,' the scores for the primed participants averaged 4.32, whereas the non-primed participants were scored at 3.63, a marginally significant difference) [*199*].

Priming also has been demonstrated to affect resistance to admitting to incriminating thoughts and behaviors. Previous research has shown that when people feel they are successful in maintaining a sense of self-integrity and self-affirmation, they also feel protected and less vulnerable to situations and even to their own actions that could potentially threaten their sense of self [for a review, see *202*]. Study participants were more likely to admit to hostile thoughts and behaviors towards members of a minority out-group, past minor criminal behaviors, and socially undesirable traits and behaviors, if they had been primed by self-affirmation. In one study [*203*], this was accomplished by first asking the study participants to read a list of personal values and qualities that they considered important, and then to write 10 lines on why their most highly rated value was important to them, also describing personal experiences in which this value shaped their decisions, preferences and behaviors. The participants were then asked to complete 10 items assessing whether they had ever committed any morally unacceptable attitudes or discriminatory aggressive behavior towards members of a minority out-group, as well as whether they had committed any undesirable behaviors relevant to this minority group. As expected, the self-affirmation prime led people to report *more* morally wrong attitudes and behaviors [*203*].[xiv]

These researchers then asked whether priming *self-disaffirmation* would lead to the opposite; that is, would the study participants be less likely to recognize any morally unacceptable attitude or behavior that might threaten their self-view as a good person. Self-disaffirmation was primed by asking participants to write ten lines elaborating on how they would feel if they were to fail to accomplish the value or attribute they had rated most highly. As predicted, the self-disaffirmation prime led these individuals to report fewer morally wrong attitudes and behaviors towards members of the minority out-group [*203*].

Embodied Cognition

Embodied cognition theories propose that processing information about things, other people, and social, moral, emotional and motivational concepts is dependent on perceptual, somatosensory, and motor processes [*205*]. Basic concepts are derived from direct physical experience. For example, a basic physical action of humans is moving through space. A journey, or traveling, thus serves to define a more abstract concept, *relationship*. *Relationships are a journey* serves as a metaphor that can describe aspects of complex relationships: *friends travel the path* of life together, face a *bumpy stretch*, are at a *crossroads*, *pursue a course that is dead-end, going nowhere*, or *go their separate ways*. Or they may *get back on the right track*, *find the sailing smooth*, and *ride into the sunset together* [*206, p.87*]. Varieties of relationships are described in terms of perceptual metaphors: friends are *warm*, strangers are *cold*, former

[xiv] The authors point out that such self-affirmation should reduce resistance to disclosure. The 'theme development' aspect of many law enforcement interviews [e.g., *204*] may reduce resistance to disclosure by decoupling the disclosure from values important to the subject (thus avoiding self-disaffirmation).

friends are *distant*, family is *close*, the boss is *higher up*. Metaphors are said to "pervade our normal conceptual system. Because so many of the concepts that are important to us are either abstract or not clearly delineated in experience... we need to get a grasp on them by means of other concepts that we understand in clearer terms..." [*207, p. 115*]. [xv]

It follows from this view of the function of metaphors – that the perceptual content of concrete experiences ground abstract ideas – that a physical sensation can be used to (nonconsciously) modify a cognition or emotion [*210*]:

- Study participants judged another participant as *warmer* when holding a *warm* cup of coffee than when holding a cold drink [*211*]. Drinking a *bitter* beverage made people make *harsher* moral judgments than if they had been given a neutral or sweet beverage [*212*].
- Tasting *sweet* foods led people to behave more positively towards others and judge themselves as being more *agreeable* [*213*].
- The physical act of *washing* relieved negative emotions associated with an *ethical* transgression [*214,215*]. Standing next to a wall-mounted hand sanitizer made participants judge others to be less moral (*unclean*) [*216*].
- Holding a *weighty* object (a clipboard weighing 2041 gm) resulted in study participants rating a job candidate as more *serious* and *important* than when they had held a light (340 gm) clipboard [*217*].

The alternative also is true. A cognition or emotion may modify perceptions of the physical world:

- When study participants were asked to recall an experience of being *rejected* and others to recall an experience of being included, those who recalled the exclusion thought a room was *colder* than those who recalled being included [*218*].
- *Social rejection*, producing psychological *coldness*, may even reduce skin temperature [*219*].
- An *open* posture results in higher *self-esteem*, higher levels of arousal and better mood, whereas a *slumped* position enhances *fear* in a social threat situation [*220*]. Maintaining an expansive posture for one minute leads to an increase in testosterone, while posing in a slumped position for the same amount of time leads to an increase in stress hormones (cortisol) [*221*].
- The physical burdens of secrecy (keeping secret, heavy information) can *weigh one down* [*222*], while revealing a secret can be physically *unburdening* [*223*].
- Being the recipient of a *benevolent* act causes people to judge candy as being *sweeter* [*224*].

A recent mock crime study was designed to test embodied cognition theory within the context of information disclosure during an interrogation [*225*]. The researchers compared two types of interview rooms, one a standard police interview room and another that was *open*. The police interrogation room was "a small, bare room with off-white walls, a two-way mirror with a shade drawn over the majority of it, overhead fluorescent lighting, two rigid chairs, and a small table. Participants and the interviewer sat on the same side of the table spaced three feet apart, with the interviewer between the participant and the door" [*225, p. 7*]. The comparison room was one with many *open* objects: "a larger room (approximately 2x [two times] bigger) with windows and off-white walls, and it featured the following openness primes: A painting hung on each wall – on one, a picture of open water under an open sky, and on two other walls, pictures of open windows with diaphanous curtains overlooking open water and open skies; two

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[xv] *Emotions* also are conceptualized and intimately connected to somatosensory and motor sensations. For example, study participants who had received subcutaneous injections of Botox to temporarily paralyze the facial muscle used in frowning were slower to understand emotional sentences that described angry situations ("Reeling from the fight with that stubborn bigot, you slam the car door") [*208, p. 896*]. In another study, participants were instructed to hold a pen in their mouth – which interferes with facial expressions of happiness and disgust. This made them less accurate in when classifying words related to the specific emotions of happiness and disgust [*209*].

open-top lamps; and a small table with a clear, open water jug, an open cup, a small open drawer with an open lock, and an open book. Participants and the interviewer sat in comfortable chairs at a large table on the same side of one another, spaced three feet apart, with the interviewer closest to the door" [*225, p. 7*]. Following exposure to a mock plot scenario, study participants were interviewed with a standard script in one of the two rooms. Those interviewed in the open room provided significantly more overall details as well as more critical details. These participants were also rated as more forthcoming than those interviewed in the standard custodial room on a 7-point scale of information disclosure, ranging from 1 (extremely withholding) to 7 (extremely forthcoming). Subsequent process modeling indicated that perceptions of greater spaciousness mediated the effect of room setting, in turn increasing disclosure.

It is reasonable to assume that metaphorical priming effects are subtle and operate against the otherwise noisy environment of an interrogation, even a mock interrogation in an experimental setting. The robustness of priming effects have been challenged even for experimental settings (see, for example, [*226*]).In addition, priming openness, warmth or making weighty decisions might interact with the tactics of the interviewer; for example, priming warmth might facilitate the interviewer's attempts at rapport building. When this hypothesis was tested, the effects of various interview tactics were shown to interact with the priming tactics [*227*]. Further research is necessary to untangle such interactions, but one conclusion was apparent: whether deliberate or not, contextual priming is ubiquitous in any interview setting and can work either against or in concert with the intended impacts of a particular interview strategy or technique.

CHAPTER 3: INTERVIEWING METHODS

Empirical observations have found that police in the U.S. regularly employ poor interview techniques that either reduce the amount of information elicited or entice subjects [witnesses, victims and suspects] to provide incorrect information [*1,2*]. The most common error is to conduct interviews as a series of pointed questions.

Cognitive Interview

The Cognitive Interview is a method of interviewing victims, witnesses and suspects that increases the amount of information gained with minimal loss in accuracy. It is based on scientific principles of social dynamics, memory, and interpersonal communication [*5*]. Although originally developed for interviews of victims and witnesses, the method has been shown to be effective for suspects as well [*6-9;* for reviews, see *10-12*; and for meta-analyses, see *13,14;* see also *15*]. The studies described in these reviews reflect both controlled laboratory experiments and field studies with suspects, victims and witnesses of real-world crimes [*7,16,17*].

The Cognitive Interview was developed to improve the social dynamics between the interviewer and the subject, the thought processes of both, and the communication between them. The social dynamics between interviewer and subject are improved by the interviewer engaging in rapport-building behaviors at the outset of the exchange and continuing these throughout. Cognitive processing is enhanced by recognizing that individuals have limited mental resources, encouraging a mental reinstatement of the context of a critical event, interviewing in such a manner as to recognize that memories are stored and recalled uniquely for each individual, and providing multiple and varied avenues for memory retrieval. Guessing and responding in terms of scripts rather than actual memories on the part of the subject are discouraged. Communication is enhanced by the interviewer encouraging – and allowing for – detailed narratives, allowing the individual to describe a memory in terms of how it is encoded (for example, describing someone's height as "taller than me" rather than in terms of feet and inches), and, in some instances, creating novel avenues for communication, such as picture drawing or mimicking a particular nonverbal behavior.

In a Cognitive Interview, the subject is instructed to take an active role in the exchange – rather than wait to be asked questions, which is what most people expect in such situations. The subject then is asked for a free narrative about the event or issue of concern. The interviewer can provide instructions regarding the amount of detail he wants, or he can provide an example (a 'model statement'), which has been shown to be a more effective method [*18,19*].[i] Starting with a free narrative provides the interviewer with a richer understanding and cues to aspects of the event of which he was previously unaware. It also reinforces a sense of autonomy on the part of the subject, which has otherwise been shown to be important to information collection [*20*].

In addition to asking for the full story, the interviewer does not interrupt the subject until he has completed his narrative. The goal is to provide opportunities for the subject to recall as much as possible; interruptions will only impair that process. The subject is also encouraged not to guess at what he may not know, but to freely admit to lapses in memory. This avoids a too-cooperative subject guessing at what the interviewer wants to know and inserting such into his narrative, and is a recognition that memory about a particular event at any one time is frail and incomplete [*21*]. Once a full narrative is provided, the interviewer may ask the subject to go through the story again, this time enhancing his ability to recall the

[i] This might be most easily accomplished by playing a brief audio tape with a highly detailed account of an unrelated event [*19*].

memories by closing his eyes or looking at a blank wall, both of which will reduce recall interference. The interviewer may *reinstate the context* of the event: that is, ask the subject to put himself back into that time and place. The interviewer assists with this by asking the subject to think about the contours of the physical environment, the time of day, the noises and smells and temperature around him, and whatever emotions he might have been feeling. Providing a match between the original context in which an event occurred (when the memories were encoded) and when the event is recalled, referred to as *context reinstatement*, facilitates recall [*22,23*]. This may be particularly effective when the information is being recalled after some delay [*24*].

Attempting to remember an event on multiple occasions has been shown to lead to information not recalled the first time [*25,26*]. Thus, the interviewer also may ask for a retelling of the story in ways that elicit additional memories. For example, the interviewer may ask that the subject describe the event in *reverse order*, starting from the end of the story and working backwards to the start, or he may ask the subject to describe the event from a *changed perspective*, for example, from the perspective of another person who played some role. Given that memory is associative [*27*], a thoughtful interviewer will provide multiple ways to retrieve additional memories without asking leading questions or inserting information that might lead to false memories, and in such a manner as to avoid recollection of *schema* [*28-30*] – that is, recollection of scripts that describe the usual course of an event rather than the details unique to a particular event. (Note 3)

The Cognitive Interview is not a set of instructions: Selecting appropriate components of the Cognitive Interview is one of the hallmarks of an expert interviewer. The interview can be shortened by omitting some of the more time-consuming tactics, such as multiple and varied retrieval mnemonics, perhaps with little to no loss of information [*31-33*]. It can be effectively extended by asking the subject to contact the interviewer if, after the interview is finished, he remembers more details and further information [*5*]. A set of written instructions by which an individual may self-administer the Cognitive Interview (the Self-Administered Interview, or SAI) is available for instances where there is not enough time or resources to interview multiple individuals about a particular event [*34*].

Observing Rapport-Based Interview Techniques (ORBIT)

Researchers in the U.K. analyzed audio and video recordings of police interviews with 29 convicted U.K. terrorist suspects to understand what behaviors on the part of both the interviewers and the suspects led the suspects to provide useful information [*20,35,36*]. These were multiple interviews representing more than 600 hours of field interrogations. The interviewers demonstrated a variety of interview tactics and the interview outcomes varied accordingly. The researchers were able, thus, to discern which interviewer behaviors led to information yield and which did not, and which suspect behaviors were associated with information yield and which were not. The observations were also systematically coded for behaviors associated with good and poor applications of Motivational Interviewing strategies (described previously in this report).

The analyses revealed that interrogator-detainee interactions could be described by two (one adaptive and one maladaptive) interpersonal circles and along two dimensions – a 'Cooperation – Confrontation' axis and a 'Capitulation – Control' axis (as illustrated in Figure 2; for an exact version, see [*20, p. 418*]). Thus, any single 'slice' had an adaptive (e.g., 'in charge, sets the agenda') and a maladaptive (e.g., 'demanding, rigid') variant. Behaviors within the same octant of the circle were statistically highly correlated (e.g., 'in charge and sets the agenda' and 'support and conversational'), whereas behaviors opposite one another were statistically lower in correlation (e.g., 'in charge and sets the agenda' and 'humble and seeking guidance').

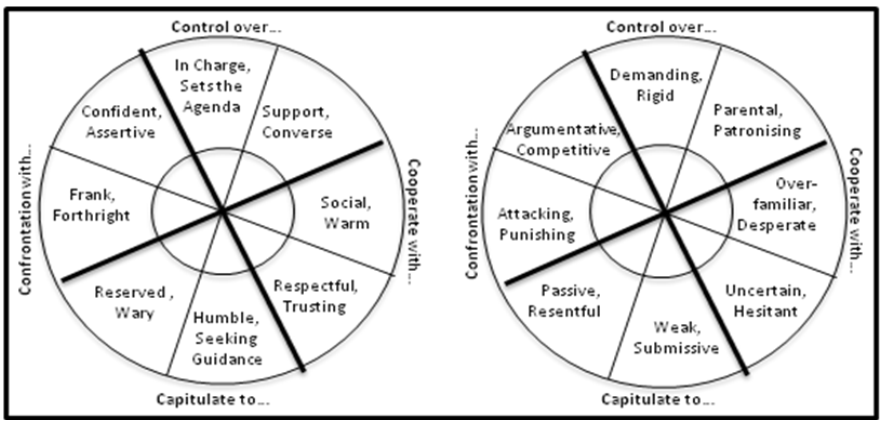

Figure 2. Adaptive (left) and maladaptive (right) Interpersonal Behavior Circles, redrawn and modified [*20, p. 418*].

The amount of useful intelligence and evidence generated was measured in terms of capability to commit the offense, opportunity, motive, and details about people locations, actions and times related to the offense. Both interviewers and suspects were found to express predominantly adaptive behaviors. The general sequence of behaviors for the interviewers was to start with advising (e.g., explanation of the legal caution), followed by being supportive (welfare checks, open questions, encouragement), and then to be frank and forthright (reflecting conflicting information back, direct questions of guilt). Adaptive interrogator behaviors produced adaptive suspect behaviors (which in turn increased yield and decreased counter-interrogation behaviors). Maladaptive interrogator behavior produced maladaptive suspect behavior (which decreased yield and increased counter-interrogation behaviors). The latter effect was particularly negative. Similar outcomes were found via analysis of a sample of 33 field interrogations conducted in Kandahar, Afghanistan and Basra, Iraq. Again, maladaptive behaviors on the part of the interrogator led to maladaptive behaviors on the part of the subjects, including to the subjects refusing to speak at all [*37*].

Structural equation modeling [*20*] showed a complex relationship among rapport-building behaviors, adaptive and maladaptive behaviors, and information yield. Interviewer adaptive behaviors did not affect information yield, although maladaptive behaviors significantly decreased yield. In contrast, there was a strong relationship between suspect adaptive behaviors and increased yield, as well as between suspect maladaptive behaviors and decreased yield. Suspect adaptive behaviors were increased by interviewer adaptive behaviors, and suspect maladaptive behaviors were increased by interviewer maladaptive behaviors. Surprisingly, there was a tendency for interviewer adaptive behaviors to increase suspect maladaptive behaviors, although, as expected, interviewer maladaptive behaviors decreased suspect adaptive behaviors. Interviewing styles had an indirect effect on yield: interviewer adaptive behaviors increased suspect adaptive behaviors, which increased yield, and interviewer maladaptive behaviors decreased suspect adaptive behaviors, which decreased yield. Overall, it was notable that less competent interviewing had a more negative effect (decreasing yield) than competent interviewing did on increasing yield.

As already noted, interviewer behaviors consistent with Motivational Interviewing (showing acceptance and empathy, being adaptive to the suspect's narrative, evoking the suspect's beliefs and

views, and encouraging a sense of autonomy on the part of the suspect) had the largest direct effect on information yield. Motivational Interviewing techniques appeared to both directly increase yield and indirectly increase yield by improving adaptive interviewing, as well as decreasing maladaptive interviewing. These techniques also increased suspect positive behaviors but did not affect suspect negative behaviors. The model indicated that the only way to decrease suspect maladaptive behaviors was through decreasing interviewer maladaptive responding, which were made less likely in the context of Motivational Interviewing techniques.

The Scharff Technique

The Scharff Technique, developed by researchers at the University of Gothenburg, is an example of *perspective taking* in the collection of intelligence information [*38*].

The research was modeled on anecdotes about a World War II interrogator, Hanns-Joachim Scharff (1907 – 1992) [*39*]. Although not trained as an interrogator, Scharff won acclaim for his mastery primarily because his subjects reported having 'friendly conversations' rather than interrogations, wherein apparently little information was exchanged. Analyzing various sources about Scharff [*39,40, 41*], the research team identified and tested four techniques that appeared fundamental to his success: (1) *be friendly and conversational rather than physical or coercive*; (2) *ask few questions and instead offer detailed narratives*; (3) *use the narratives to reflect back information that the interrogator already has or can reasonably speculate about, leading the subject to assume that the interrogator knows a lot already, and* (4) *collect new information not by asking direct questions but by using both implicit and explicit confirmation and/or disconfirmation*. These tactics were based on Scharff engaging in perspective taking to identify three basic counter-interrogation strategies the prisoners adopted to resist providing information to their captors: (1) do not talk very much, (2) figure out what the interrogator wants and then do not give it to him, and (3) do not feel compelled to hold back information that it appears the interrogator already knows.

A series of studies were conducted using an experimental scenario where study participants received general and specific information items about a (mock) terrorist group's plans to bomb a shopping mall. Of these, some percentage was known by the interviewer. When interviewed, the subject was motivated to strike a balance between providing too little and too much information. The Scharff Technique was contrasted with the efficacy of an 'open-ended' interview strategy and a 'direct questions' interview strategy. Each interview was analyzed to determine how much information was revealed by the subject during the interview, as well as how much information the subject actually thought he had provided.

Comparison of the Scharff Technique with the 'open-ended' questions strategy showed no difference in the amount of information elicited [*42*]; however, comparison with the the 'direct questions' approach demonstrated that more information was revealed using the Scharff Technique [*43-47*]. In addition, the Scharff Technique consistently resulted in subjects thinking that they had revealed <u>less</u> information than they actually did, and believing that the interviewer had <u>more</u> information than they did. In contrast, the use of the 'direct questions' approach resulted in subjects believing that they had revealed <u>more</u> information than they actually did and believing the interviewer to have <u>less</u> information than he did. The Scharff Technique has also been shown to be effective for resistant as well as unresistant subjects, and for subjects who have either a lot of information or little information [*43-46*].

Strategic Use of Evidence

Many of the science-based methods of effective interrogation have been shown to incorporate perspective taking (development of rapport, cross-cultural communication, developing unanticipated questions to detect deception, detecting deception about future intentions, and the Scharff Technique). The Strategic Use of Evidence (SUE) approach also depends on perspective taking [*48-49*; for a meta-analysis, see *50*]. SUE is part of an emerging body of scientific studies focusing on the different

psychological processes of liars and truth tellers (as opposed to a focus on overt behaviors), and on strategic interviewing (as opposed to assuming that lies can be detected via "yes" or "no" responses, as with a polygraph).

The SUE technique consists of four principles:

- *The suspect's perception of the evidence:* Guilty suspects are particularly likely to hypothesize about what will be asked of them in a police interview [*51*]. In particular, a suspect will try to guess what evidence an interviewer has.
- *Counter-interrogation strategies:* Both guilty and innocent suspects try to convince the interviewer that they are innocent, but they use different strategies [*52*]. Liars are likely to develop a plan or strategy before the interview [*51*] and avoid disclosing information [*53*]. If they cannot avoid disclosure, they will deny [*51*]. Innocent suspects are not likely to plan or strategize; they are *forthcoming* – that is, they provide a complete and truthful account, most likely because they believe they deserve to be believed and because of the *illusion of transparency* – that is, that their innocence 'shines through' [*54*].[ii]
- *The suspect's verbal responses* provide two kinds of cues to deception: The first cue is *statement-evidence inconsistencies*, which are discrepancies or contradictions between the suspect's account and evidence held by the interviewer. The second cue is *within-statement inconsistencies*, which occur when the suspect changes his statements to make them fit the evidence as it is presented to him. Within-statement inconsistencies are more likely if the interviewer reveals each piece of evidence in an incremental fashion using an *Evidence Framing Matrix* [*56*].
- *The interviewer takes the suspect's perspective:* Taking the perspective of the suspect, the interviewer can attempt to understand the suspect's perception of the evidence against him, what his counter-interrogation strategies might be, and how he will respond to the evidence as it is presented.

SUE assumes that these principles work together: a suspect's perception of the evidence will affect his choice of counter-interrogation strategies and this, in turn, will be revealed in what he says [*57*]. If an interviewer understands these (by taking the perspective of the subject), he can better plan the interview. For example, an interviewer might think that the suspect knows of evidence A and B, but not C. The interviewer then will predict that the suspect will talk freely about A and B, but not about C. Focusing on C will most likely produce statement-evidence inconsistency (an indicator that the suspect is lying) or statement-evidence consistency (an indicator that the suspect is telling the truth).

The SUE technique has been shown to be successful in eliciting cues to deception in experimental studies with single suspects [*58*] and small groups of suspects [*59*], and for study participants lying about their past actions [*60*] or their future intentions [*61*].[iii] It has been shown to be effectively resistant to counter-measures [*63*]. Numerous studies have found that perception of strength of evidence is a significant factor in subjects confessing [*64,65*]: using such evidence strategically is a powerful influence tactic. SUE is more than a method of detecting deception; it is a method of strategically interviewing and taking maximum advantage of evidence or information to elicit more evidence or information. (Note 4)

Interrogating Across Cultures

There are cultural differences in the way people talk with each other that may have significant impacts on an interview or interrogation. A survey of interrogators and investigative interviewers from 10 countries found that interrogators reported greater success when interrogating individuals from their own

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[ii] As an illustration of the illusion of transparency, studies have shown that innocent suspects are more likely to waive their Miranda rights than guilty suspects, arguing that they have nothing to hide and that the interviewer would see that they are innocent [*55*].

[iii] SUE has been introduced to practitioners (including police and intelligence agencies) in the U.S., Canada, China, England, Germany, Japan, the Netherlands, Norway, Russia, Scotland, Sweden, and Wales. [*49,62*].

countries [*66*]. Much of the research in this area has focused on verbal exchanges in negotiations [e.g., *67-72*], with less analysis of interrogations [e.g., *73*]. An interview obviously is not a negotiation, but there is considerable overlap in effective strategies, influence tactics and underlying psychological processes. Paramount to both interviews and negotiations are reciprocity [*74*], perspective taking [*75*], and trust [*76-78*]. Common misunderstandings that occur across cultures in crisis negotiations are most likely due to misperceptions of building rapport and obligatory reciprocity, group membership and individual rights, role differences and authority, honor and face issues, the involvement of third parties, and the use of logic, rationality, and ultimatums [*68*]. Many of these very issues are relevant to interviewing and interrogations.

Researchers in the U.K. and European Union [*79;* see also *80*] identified four areas of misunderstanding in cross-cultural communications in general social encounters, investigative interviews, and police negotiations [*81-83*]. These can be conceptualized as occurring across the course of an interview:

- *Orientation dialogue* is how an exchange is begun, although some aspects of this (small talk) may continue throughout. There are cultural differences in expectations of small talk: Germans, for example, expect less small talk than the English [*84*].
- *Relational dialogue* speaks to issues such as personal reputation, identity, and social belonging. Cultures vary in terms of how they value social groups and personal face. Individuals from some cultures describe events in a linear fashion, starting with a brief description of the setting and then continuing with an account that unfolds in a chronological order. Individuals from other cultures are more likely to engage in participatory dialogue, expecting listener feedback, including information about the background, social relations, and sometimes even history of the narrative's players [*85*].
    - Although empathy often is assumed to be universally effective in relationship and trust building [*86,87*], examination of 27 video recorded Dutch police interviews, 12 with Dutch suspects and 15 with Moroccan suspects, showed that the Moroccan suspects responded negatively in terms of refusing to provide information when the police engaged in being kind and empathetic; for these suspects, intimidation (ultimatum) that focused on friends and/or family was more successful [*88*, see also *89*].
- *Problem solving dialogue*: For individuals from Western cultures, problems are solved by argument and persuasion, pointing out the presence and absence of evidence, and identifying inconsistencies [*90*]; in the West, "time is money" [*91*]. This is not characteristic of individuals from Middle or Far Eastern cultures, where argument and evidence are secondary to relationship building [*92-95*], empathy and connection [*96-99*], mindfulness and emotions [*100*], and maintenance of 'face' [*101*].
- *Resolution*: When closing, a suspect may be resistant to any resolution because doing so might mean a loss of face or provide information that might incriminate him. Face is "an individual's claimed sense of positive image in the context of social interaction" [*102*, *p. 398*]. For some individuals, this is more important than solving a problem or revealing information.

Cultural factors have been demonstrated to influence the effectiveness of police tactics. When Dutch college students (with both parents born in the Netherlands, considered a low-context culture)[iv] were

[iv] Dutch culture is described as low context; that is, individuals from The Netherlands are highly individualized and view themselves as independent from others. Communication is explicit and direct. In contrast, individuals from 'high context' cultures, such as Morocco, are characterized by strong social bonds, and individual feelings and opinions are suppressed in favor of the community. Consequently, communication is more indirect and relationship-oriented [*104*].

interviewed by experienced Dutch Police Academy interviewers following a mock crime event, rational persuasion tactics (arguments and logic) were effective in eliciting admissions. However, when the students had parents born in a range of non-Western countries (including Turkey, Morocco, Indonesia, Armenia, Azerbaijan, and Iraq, all considered high-context cultures), being kind (friendly and helpful) and active listening behaviors were most likely to elicit admissions, and rational persuasion tactics actually decreased admissions [*103*].

Research and theory development on negotiation has occurred mostly in the U.S., Europe, and other English-speaking countries, with only about 2% of the samples upon which current theories are based coming from the Middle East, Latin American, and Africa [*105*]. In part to address this disparity, an international team of researchers [*94*] examined 60-minute 'Discount Marketplace' negotiations among community members from the U.S. and Egypt. The Discount Marketplace negotiation task [*106*] is a two-party negotiation between a real estate developer who plans to open a mall and a large retailer who is interested in opening a store in the mall, needing to sublet space to do so. The task gives both parties opportunities to be creative and find solutions that will satisfy both of their interests. It is *integrative* [*107*] in that each negotiator needs to look beyond the factor upon which they disagree (subletting) to discover ways to meet each other's interests. Analyses focused on the linguistic pathways between the negotiators that enabled them to reach creative agreements, using Pennebaker's Linguistic Inquiry and Word Count (LIWC [*108*]) – software supplemented with an *honor dictionary* coded for promoting honorable behavior and signaling that the negotiator was virtuous (abiding by codes of loyalty, honesty, and trustworthiness). As anticipated, the negotiations were construed by the U.S. negotiators as rational exchanges where people should separate the person from the task, whereas for the Egyptian negotiators, the person was the task. The use of rational talk was helpful for creative agreements in the U.S. but harmful in Egypt. Language related to honor and moral integrity was helpful for creative agreements in Egypt but not in the U.S. The language that facilitated creative agreements in the U.S. actually backfired and hindered agreements in Egypt [*94*].

Interrogating via an Interpreter

Relaying information via a third party increases the risk that some of that information will be lost [*109-113*]. Speaking in a foreign language is also cognitively demanding [*114-116*] and speakers appear to experience less emotion when using a second language compared to when using their own language [*117-119*]. Both a greater cognitive demand and less emotion are likely to interfere with the communication and social dynamics between an interviewer and a subject [e.g., *120*]; the increased cognitive demand [*121*] might be expected to make detection of deceptive statements more difficult as well [*115,122,123*]. However, research on the use of interpreters in clinical settings has shown that an interpreter may also serve as a cultural consultant, community advocate, or even co-therapist [*124-127*] and that therapeutic alliance (see above) is not adversely impacted by the presence of an interpreter. In simulated interrogations, interviewees who spoke truthfully or lied through an interpreter about their current occupations reported that the presence of an interpreter had no effect on the rapport they felt with the interviewer [*122*].

Interviews with interpreters in human intelligence collection [*128,129*] and law enforcement [*130,131*] settings indicate that interpreters feel their role is more than to provide literal translation; in the words of two FBI interpreters:

> *"My cultural knowledge can help interrogators tune/adjust their methods of interrogations when appropriate, and to avoid misunderstandings that may unnecessarily offend the target."*
>
> *"Asking for my input about the region, culture, language as well as social norms would help the interrogators come up with an effective interrogation plan*" [*129*, *p. 843*].

An analysis of videos of ten consecutive interpreted interrogation sessions that occurred in a Department of Defense long-term detention facility in Afghanistan in 2011 was informative about the relationship among the interrogator, the interpreter, and the detainee [*132*].[v] The observed interrogation sessions had occurred approximately mid-way through a much longer series of interrogations with a detainee who it was believed had significant intelligence. Two interpreters assisted in the interrogations, each of whom spoke the subject's language but only as a second language. The videos were translated and transcribed in a secure facility, and any personally identifying information was removed prior to the transcripts being given to the research team.[vi]

Data analysis focused on the impacts of the interpreter on information gain. Interpreter behaviors were coded as gist (when a verbatim or gist translation conveyed the meaning if not the exact word of the original utterance), omissions (leaving out an important piece of information), false fluency (using words or phrases that do not exist in the target language), substitution (replacing a word or phrase with another word of phrase with a different meaning), and addition (adding a word or phrase). Interpreters sometimes added comments not originally spoken by the interrogator or the detainee (coded as role reversals). Approximately 7% of the interrogators' speech was determined to be directed at developing rapport with the detainee (within a relational frame [*133*]), primarily at the beginning and end of each interrogation session. The interpreters asked more clarifying questions of the detainee than of the interrogator. The bulk of the interpretation was coded as gist (ranging across the sessions from 54% to 85% of all statements made). Role reversals and omissions occurred only about 7% of the time [*132*]. Overall, it appeared that the interrogators had relatively little impact on information gain.

Experimental data on the impacts of interpreters on an interviewer's ability to discern credibility are mixed. A bias to judge non-native speakers as lying more often than native speakers has sometimes been reported [*134,135*] but not always [*136,137*]. Experimental analysis of British, Chinese, Arabic, Korean, Hispanic, and Urdu liars and truth tellers found that liars were no less detailed than native English speakers when they spoke through an interpreter [*122*]; since truth tellers typically provide more details than liars [*138,139*], this finding indicates that speaking through an interpreter may obscure cues to deception. However, in one study, Chinese, Korean, and Hispanic study participants were asked to provide either a truthful account or a cover story about a mock crime scenario, first in chronological order and then in reverse order.[vii] The reverse order technique revealed cues to deceit when the participants spoke through an interpreter, but not when they spoke in English (not their native language) [*141*].

Interrogating as a team

Research supports the notion that a team approach to intelligence analysis that occurs prior to an interrogation and those concurrent with a long-term interrogation are more effective if conducted as part of a multi-disciplinary team [*142-150*]. In general, small groups provide opportunities for a division of labor and can be more efficient than individual-level approaches. Small groups are generally more effective at solving problems and making decisions than the average of the individuals within the group, in part because the group can draw on a more diverse set of knowledge and skills [for reviews, see *151-159*]. Key conditions contributing to effective teamwork are (i) whether the members are interdependent and membership is stable; (ii) the extent to which the team has a clear and compelling purpose; (iii) whether the structure of the team supports the task and maintains group norms; (iv) the extent to which

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[v] Videos were given to the HIG via an agreement with CENTCOM. The data is routinely encrypted and stored in national archives.

[vi] DoD determined that this research project was not human subjects research under DoD Instruction 3216.02, Protection of Human Subjects and Adherence to Ethical Standards in DoD-Supported Research and 32 C.F.R. Part 219.

[vii] The reverse order technique imposes considerable cognitive load and has been shown to enhance cues to deception [*140*].

the team is working in an organizational structure that provides rewards, information, training and material resources, and (v) access to a coach who is an expert, available and helps the group focus on effective task processes [*160,161*]. Teams that work in conditions of dynamic, rapidly changing conditions are more effective if they train together [*162-166*].

Tandem interviewing, where two interviewers are present [*167*], is common in law enforcement settings but is usually dependent on whether another officer is present and available for the interrogation [*168*]. One study on the relative effectiveness of tandem interviewing vs. individual interviewing in a simulated interrogation setting demonstrated that tandem interviewers achieved superior interview outcomes, including a reduction in cognitive demand, and showed more attention to issue-relevant information (i.e., story cues) and a greater use of open-ended questions [*169*]. Further experiments on the impacts of tandem interviewing on rapport has been mixed, showing a deleterious effect in one instance [*169*] and no impact in two others [*170-171*]

Recording the interview

The number of American states requiring law enforcement officers to electronically record some or all interviews conducted with suspects in their custody has grown from two to at least 22 since 2003 [*172*]. On May 22, 2014, the U.S. Department of Justice announced a substantial change in its policy, creating a presumption that the FBI, Drug Enforcement Agency, Bureau of Alcohol, Tobacco, Firearms and Explosives, and United States Marshals Service will electronically record their custodial interviews [*173*].

Arguments in favor of this practice, which were made as early as the 1930s [*174-177*], have included the need for a good record of the proceedings [*178-181*], addressing disparities in perceptions or preconceived biases [*178,182*], including differences in how statements are interpreted [*183*]; deterring police misconduct; reducing the number and length of motions to suppress confessions; and ensuring that the essence of the Miranda warning was not eschewed when presented to suspects (*178,184-187*]. In addition, juries are increasingly finding it implausible that a video record was not easily accomplished and are inferring that the motivation for failing to record was to hide some aspect of the proceedings [*178,181,188*]. An important factor in favor of video or audio recording is that it relieves the interrogator from note taking, which is distracting [*178,181*], allows for others to review the interrogation [*178,179*], and can be used to provide a transcript of the proceedings.

There is no evidence that video or audio recording affects cooperation or confessions [*189*], and police agencies that have implemented video recording of interrogations have reported the change as positive in almost all instances [*179,190*].

- *Camera perspective bias*: More than two decades of research have shown that if the camera focuses only on the suspect, the visual prominence of the suspect leads observers to conclude that self-incriminating statements are largely volitional rather than a consequence of pressure being exerted by the interrogator, irrespective of the reality of the situation [*191-196*].[viii] One way to correct for camera perspective bias is to position the camera so that the profiles of the suspect and the interrogator are similarly visible. A split-screen presentation of face-on views of both is not advised because research has shown that the dual camera perspective, like the suspect-focus perspective, leads to relatively poor performance with respect to accurately identifying whether a confession is true or false [*181*].

[viii] This is because research has shown that people make causal attributions to things that they see [*191,197,198*].

CHAPTER 4: DETECTING TRUTH AND DECEPTION

Discerning whether someone is telling the truth or not, in the absence of any other information than that provided within the interview, is extraordinarily difficult. A meta-analysis of more than 120 studies [primarily laboratory studies where ground truth was known] showed that behavioral differences between truth-tellers and liars are few, weak, and unreliable [*1*]. This laboratory research, with approximately 25,000 participants, showed that when someone tries to determine veracity based on speech or behavior alone, they achieve only about 54% accuracy, where 50% accuracy is achieved by chance [*2,3*]. The researchers found that in real-world police interviews, accuracy is, at best, 65% [*4*].

Detecting deception is difficult for multiple reasons:

- There is an almost universal tendency to believe that gaze aversion is an indication of deception [*5*], whereas gaze aversion has never been shown to be a reliable indicator [*6*]. Various vocal cues (hesitations, pauses, speech errors, speech rate) and nonverbal cues (such as gaze aversion, self-adaptors, and fidgeting) are believed to be indicators of deception but are in fact unreliable cues [*7*].
- Professionals (i.e., police) are taught to use unreliable cues to deception. For example, police officers are taught that liars look away and make grooming gestures [*8*], and in two studies, 75% of the police officers queried endorsed these views [*4,9*], but such cues are, in fact, unrelated to deception [*1*]. In another study, police officers watching video clips of real police interviews performed worse the more they used the typically trained cues, and students trained on the police methods performed worse than untrained students [*4,10*].
- Training to detect deception based on nonverbal cues does not help. A recent meta-analysis of 30 research studies showed that training on how to detect deception produced only modest improvements in accuracy of deception detection [*11,12*].
- Signs of deception are likely to vary by culture, although the research on this is relatively recent and scarce [e.g., *13,14*].

Traditional deception detection has focused on nonverbal approaches. For example, the Behavioral Analysis Interview, common to U.S. law enforcement [*8*], relies on nonverbal and paralinguistic cues of the sort that deception research has shown to be unreliable [*1*]. *Micro-expressions* – fleeting facial expressions expressed and then suppressed within $1/5^{th}$ to $1/25^{th}$ of a second [*15*] – while indicative of genuine emotions, have been found to have no reliable relationship to deception [*16*]. *Neurolinguistic Programming* [*NLP*], which is neither neuroscience nor linguistic based, has been proposed as a way of helping an interrogator discern truth telling from lying in criminal interviews and interrogations [e.g., *17-20*]. However, it lacks theoretical consistency and there is no substantive evidence of its validity and accuracy [*21-23*].

In contrast, science-based techniques to distinguish between truths and lies take into account the different strategies and assumptions of truth-tellers and liars and propose that an interviewer exacerbate this difference by the interview methods he uses. Rather than training the interviewer to discern cues to deception, which has been shown to be relatively ineffective, the focus is on training the interviewer to interview in such a manner that cues to deception are made more obvious, even to the naïve observer. These methods are detailed below.

Cognitive Approaches to Detecting Deception

Cognition is a primary factor in current theories of deception [*1,24-29*]. Increasingly, the science points to a cognitive-based (as opposed to an anxiety-based) approach as the most effective strategy for

detecting deception [for reviews, see *29-35*]. A recent meta-analysis of cognitive approaches to lie detection showed that this approach produced greater accuracy in truth detection (67%), lie detection (67%) and truth and lie detection combined (71%) compared to traditional approaches (that involved no cognitive lie detection manipulation), which resulted in truth detection at 57%, lie detection at 46%, and truth and lie detection at 56% [*36*].

Encouraging interviewees to say more. Getting a suspect to talk often is not difficult; one study found that 80% of the suspects observed in 600 police interviews were cooperative and answered police questions readily [*37*]. An analysis of more than 1,067 information-gathering police interviews showed that only about 5% of the suspects remained silent [*38*]. As noted elsewhere in this report, those interview methods that encourage talking [*39-44*], such as the Cognitive Interview [*45-49*] have been found to elicit significantly more cues to deceit than accusatorial methods, which are characterized by the interviewer talking more than the subject [e.g., *8*]. It is reasonable to assume that tactics that encourage even more talking will provide more cues to deceit as well as increase the likelihood that the subject will provide information that can be checked against independent sources.

When truth-tellers are encouraged to say more, they can [*50*] and do [*51*] draw on real memories to provide details that make their account sound more plausible because details add to plausibility. Liars may be hesitant to provide more details either because they cannot draw on real memories, lack the imagination to fabricate a detailed, plausible story, or fear that they will give themselves away [*52*]; they also may become hesitant to say too much when challenged [*53*]. One study showed that even when liars and truth-tellers engaged in the same activity, liars provided less information about the activity than did truth tellers in a subsequent interview [*54*]. Supportive interviewing [*39,48*] and mimicry [*55*] have been shown to encourage truthful subjects to say more, as has a silent second interviewer who just nodded and smiled even when the subject had looked at the silent second less than 10% of the time [*56*]. Because subjects expect to be asked questions rather than just talk, providing them with explicit instructions about their role in the interview, as is part of the Cognitive Interview, will encourage more informative talking [e.g., *57*]. Perhaps because demonstrations are more powerful than instructions, providing subjects with an example of a detailed account by playing an audio tape that describes an unrelated event in great detail (a *model statement*) has been shown to exacerbate the difference between the plausibility of truth-tellers' and liars' accounts [*58*]. (Note 5)

Truth-tellers also have been shown to be more detailed when drawing a place or people than when they are asked for verbal descriptions [*59,60*]. When truth-tellers discussed their own occupations and liars discussed an occupation they pretended to have, the sketches each provided of their offices were more detailed for the truth tellers than the liars' [*61*]. Asking for a sketch demands that the subject provide detailed spatial information in a way that a verbal account does not. In addition, truth-tellers – in comparison to liars – are more likely to include people in their drawings, as well as idiosyncratic features of people (e.g., wearing glasses or having curly hair). Avoiding including people in drawings may be a tactic a liar adopts because including them would provide the interviewer with another possible source to validate the story [*33*].

It is important to note that consistency across multiple statements regarding the same issue is not a reliable indicator of truthfulness, and inconsistency across multiple statements is not a reliable indicator of deception [*62,63;* for a review, see *64*], contrary to common investigative practice [e.g., *65*], the beliefs of police, attorneys and judges [e.g., *66,67*] and even some U.S. federal instructions on witness credibility [*68*; see *69*].

Asking for verifiable details. Research has shown that liars try to provide as many details as possible in order to make a good impression, but they also are wary of giving an investigator details that he could follow up on to verify [*70*]. This leads them to provide details that are not verifiable, in contrast to truth-

tellers, who tend to provide verifiable details; research has shown significant differences between liars and truth-tellers in the number of verifiable details offered [*71-73*]. Thus, explicitly asking a subject to provide verifiable details may be a tactic for which there are no effective counter-measures: only truth-tellers will be able to provide actual verifiable details. It may be a useful tactic even when an investigator does not actually follow up on the leads, but simply is aware of how many and what type of verifiable details are offered [*74*].

Asking unanticipated questions. As noted elsewhere in this report, perspective taking is critically important to successful interviewing. As part of the preparation for an interview, the interviewer should take the perspective of the subject: What does he expect to happen? What questions will he anticipate? A consistent finding in studies of deception is that when individuals expect to be questioned about a story that is not true, they prepare their answers to the questions they expect to get [*75*]. Obviously, such perspective taking requires some thoughtfulness on the part of the interviewer, and preparation will vary depending on the circumstances of the events of concern and the extent of shared knowledge. The interviewer can begin by asking questions that are likely to be anticipated, for which the subject is likely to have prepared. This establishes a baseline for comparison with the manner in which the subject then answers questions that are likely to be unanticipated. If the subject is telling the truth, he should be able to draw on real memories to answer these questions; if he is lying, the level of detail in response to the unanticipated questions should drop.

Asking a subject to draw something relevant to the event of concern is usually an unanticipated request. In an early demonstration of the power of this tactic [*76*], participants either went to lunch together as a pair or were asked to prepare a cover story about going to lunch together. When the pairs were asked to draw pictures of the restaurant, the drawings were less alike for the pairs of liars than for the truth-tellers. Independent assessments of the similarity of the pairs of drawings provided 78% classification accuracy [see also *77-78*]. Subsequent analyses of the efficacy of asking for drawings have shown that for the request to be diagnostic – that is, to exacerbate differences between truth-tellers and liars – it should be focused on a core aspect of the event [*79*].

Imposing additional cognitive load. The *cognitive load* model of deception [*80-83*] asserts that lying is multi-tasking and for that reason difficult. Liars must plan what they say, remember to play a role [*84*], and suppress the truth [*85*], as well as justify their deception, whereas truth telling requires none of these [*86*]. Liars try not to contradict themselves or what they think the observer knows; they must be alert to the impressions they are creating, and they must appear as credible as possible (therefore requiring that they also be aware of their own behaviors as well as the observer's) [*87*]. Liars also are typically less likely than truth-tellers to take their credibility for granted [*88*]. Analyses of police interviews showed that lies were accompanied by increased pauses, decreased blinking, and decreased hand and finger movement, which are signs of thinking hard [*89,90*]. The cognitive load method of detecting deception is to interview in such a manner that the cognitive load a suspect is already experiencing is enhanced by the nature of the interview [*91-93*].

It should be noted that there are exceptions. Not all lies are equally difficult; a prepared lie is easier than a spontaneous lie [*94,95*] and a lie might be embedded in a larger truth so that the lie is difficult to discern. In some cases, lying can be less taxing than truth telling, such as when the relevant memories have not been accessed for some time or when truth telling requires elaboration [*96-99*].

One way to increase cognitive load is to ask the subject to repeat their narrative in reverse order – that is, start with the last event and work backwards. This is difficult because memories are usually coded in a forward order sequence of events [*100*] and asking for a narrative backwards makes it more difficult to reconstruct the event. When study participants were asked to recall what they did on a recent Saturday night in reverse order, lies were detected with a higher accuracy (75%) than for the condition where a

reverse-order account was not solicited (18%) [*101*]. Note that asking for a story in reverse order is part of the Cognitive Interview [*102*], where it has been shown to prompt additional memory retrievals [*103*]. There are other methods of imposing cognitive load, such as asking a subject to maintain eye contact with the interviewer. This is difficult because people are inclined to look away in a conversation when trying to recall a memory, presumably because maintaining eye contact is distracting [*104*]. As previously described, asking subjects to close their eyes or look at a bare wall is a tactic of the Cognitive Interview to enhance recollections of memories. When study participants were asked to maintain eye contact with the interviewer, more cues to deceit emerged in the 'maintaining eye contact' condition than in a condition where no such instruction was given [*105*].

Collective interviewing. Interviewing subjects in pairs has been shown to provide unique cues as to the validity of their stories. In the first experiment to demonstrate this effect [*106*], pairs of truth-tellers and pairs of liars were interviewed in pairs about having had lunch together. Truth-tellers used a "tell it all strategy" and provided more details; they also interrupted each other, corrected each other, and added more details to the other's story than the pairs of liars [see also *107*]. Subsequent research showed that pairs of liars maintained more eye contact with the interviewer (presumably engaging in impression management) and less with each other [*108*] and pairs of liars were less likely than pairs of truth-tellers to report unexpected events [*54*].

Devil's Advocate. The Devil's Advocate approach shows some promise as a method of assessing the extent to which a subject is truthful or not about his values and beliefs regarding a particular topic. In one experiment, subjects were asked to argue first in favor of an issue they had already admitted to favor, and then to argue against the issue [*109*]. The true opinions were viewed as more immediate and plausible, and as containing more emotional involvement than their Devil's Advocate answers [cf. *110*].

Deception about past acts vs. future intentions. The majority of research on detecting deception has focused on true and false statements about past events [*7*]. There is less research on *intentions* – that is, either statements of true intent (where a subject describes an action he will take in the future) or statements about false intents (where a subject refers to an action he does not intent to carry out) [*111*]. Intentions have been defined in social psychology as a subject's mental state preceding a corresponding action; unlike desires, intentions come with a commitment to perform the action and are associated with forethought and planning [*112-114*]. A challenge to this area of research for intelligence interviewing and interrogation is the well-known *intention-behavior ga*p: intentions do not guarantee actions. Research has shown that when intention commitment is low, individuals speak of hindrances with regard to their ability to conduct a task [*115*]. It is possible that liars would not do this, thus providing a possible strategy for an interviewer to discern between truth-tellers and liars as they speak about their intentions [*111*].

In one of the first studies of lying about intentions, researchers interviewed passengers at an international airport [*116*]. Some were asked to answer all the questions about their travel truthfully, while others were asked to be truthful except about the purpose (intent) of their travel. The interviewers were able to discriminate between the truth-tellers and liars at an accuracy rate of 70%. In another study, when truth-tellers and liars were asked about planning a mock crime, liars produced more statement-evidence inconsistencies when interviewed using the Strategic Use of Evidence technique than when not [*117*].

An emerging body of research shows that asking about intentions may be a useful strategy to distinguish between truth-tellers and liars in an interview or interrogation [*118*]. As noted, planning is typical of a true intention [*114*]. Asking about plans may serve as an unanticipated question. For example, in one study [*119*], passengers were asked expected questions (e.g., "What will you do on your trip?") and less expected questions (e.g., "How did you *plan* for this trip?"). Truth-tellers and liars provided similar levels of details in response to the expected question, but truth-tellers provided more details than liars in

response to the unanticipated question [see also *120-122*].

Controlled Cognitive Engagement

The tactics of unanticipated questioning and imposing cognitive load were part of a security screening method called Controlled Cognitive Engagement (CCE) that detected 66% of deceptive passengers in an *in vivo*, double-blind randomized-control trial conducted at five international airports [*123*]. The usual airport screening behavioral indicators detected less than 5% of deceptive passengers. (Note 6)

Linguistic cues to deception

To date, no single verbal cue or cluster of verbal cues has been identified as indicative of deception [*52*]. However, the utility of attending to language (as opposed to nonverbal or physiological cues) has been supported by both empirical and practitioners' anecdotal evidence [*7,124*]. Truthful narratives have been distinguished by the quantity of details, unstructured speech, contextual embedding and reproduction of conversation [*125-127*].

Statement Validity Analysis. Statement Validity Analysis (SVA) originally was designed to assess statements of children in alleged sexual abuse cases but has since been applied to assess adults' statements [*128,129*]. SVA consists of four stages:

(1) Case file analysis: Analysis of the case file gives the SVA expert insight about what happened and identifies issues of dispute.

(2) Semi-structured interview: Here, the child provides his or her own account. Good interviewing techniques are important in this instance [e.g., *39,41,47,45,130*] because children's descriptions of past events are incomplete [*131*]. The interview begins by asking for an open narrative followed by open-ended questions. Focused questions and probing questions are asked only if clarification is required. These interviews are taped and transcribed for the next phase of the analysis.

(3) Criteria-Based Content Analysis (CBCA). CBCA consists of trained evaluators looking for the presence or absence of indicators of true versus false memories, based on the Undeutsch Hypothesis that a statement from memory differs in content and quality from a statement from fantasy or invention [*132-134*]. There are 19 criteria and it is assumed that truthful statements will have more of the elements measured by CBCA than false statements. Thirteen of the criteria are assumed to indicate truthfulness because fabrication would be cognitively difficult (for example, contextual embedding, reproductions of conversations, unexpected details). Criteria 14-18 are more likely to occur in a truthful account because truth-tellers are less motivated to engage in impression management and therefore more likely to make spontaneous corrections, admit a lack of memory, raise doubts about their own memory or be self-deprecating, and blame the perpetrator. Criterion #19 is the extent to which specific details about the case are offered.

(4) Validity Checklist: External factors that might affect the CBCA are considered. These include assessments of the mental capacity of the child, susceptibility to suggestion, motives or pressures to report, and consistency with other evidence.

Field studies of SVA show some support for the method [*104,135,136*]. A review of laboratory studies focused on the CBCA step showed that the average accuracy rate for classifying both truths and lies was 71% [*7*]. Criteria #3,'quantity of details, was most diagnostic: in 22 out of 29 studies in which it was measured, truth-tellers included significantly more details in their accounts than did liars [*50*].

Reality Monitoring. The process by which an individual attributes a memory to a real experience or to imagination is called *reality monitoring* [*137*]. Memories of real experiences are likely to contain sensory information (details of smell, taste or touch, visual and auditory details), contextual and spatial details, and details about how the person felt. Memories about imagined events are more likely to contain cognitive operations, such as "I must have had my coat on, as it was very cold that night" and be vaguer. These characteristics have been used to distinguish whether memories are based on real events or are

imagined [*138,139*]. As noted earlier in this report, richness of detail is a robust cue to truth-telling [*7,140-142*]. *Reality Monitoring* criteria have been used successfully in laboratory studies to distinguish truth telling vs. lying (where ground truth is known). Typically, the researcher looks for clarity and vividness of statements, the presence of sensory information (what was heard, seen, smelled, felt), spatial and temporal details, and sensations of the self (e.g., pain or surprise) [*30*]. Other cues may be whether the story could be reconstructed based on the information provided, its plausibility, and the absence of cognitive operations. Reviews of deception detection using Reality Monitoring [*143*] have shown the average accuracy rate to be about 70% [*30,50*].

Scientific Content Analysis (SCAN). In the SCAN procedure, subjects are asked to write a detailed description of their activities related to an event in question, and then this statement is analyzed according to criteria that are assumed to distinguish truthful vs deceptive statements. These criteria appear to vary across practitioners [*30*].[i] Unlike Reality Monitoring, which is rarely used in the field in spite of the body of research that supports it, SCAN is widely employed in spite of a lack of supporting research.[ii] Several studies are commonly cited but they lacked ground truth, so that any conclusion about the efficacy of the technique is difficult to assert [*144,145*; see *30*]. When all 12 SCAN criteria were used in a laboratory study, SCAN did not distinguish truth-tellers from liars above the level of chance [*70*].[iii] Both gaps in memory and spontaneous corrections have been shown to be indicators of truth [*66,146,147*], contrary to what is claimed by SCAN.

Automated text analysis. With the increasing sophistication of technology that enables speech to text translation and the ability to quickly analyze text with a variety of tools, real-time analysis of interview narratives to discern deception are likely to be useful in the near-term. A growing body of research shows that underlying thoughts, emotions and motives can be identified by counting and categorizing the words people use [*148*]. A meta-analysis of studies using Linguistic Inquiry and Word Count (LIWC [*149*]) to discriminate between truth-tellers and liars on the basis of their statements showed that liars tended to use more words expressing positive and negative emotions, motion verbs and negations, fewer self-referents and fewer time-related words [*150*]. Decreases in first person pronouns have been shown for deceptive statements by suspects [*151*], prisoners [*152*], and students interacting via computer to get to know each other [*153*]. Similar effects have been observed for individuals who fake TripAdvisor reviews [*154*] and workers who deceive their colleagues about insider threats [*155*]. Perhaps liars avoid statements of ownership to dissociate themselves from their words or because they were not personally experiencing the event [*156*; see also *157,158*].

Forensic Statement Analysis. Forensic Statement Analysis assumes that deceptive narratives are shorter, contain fewer details than truthful narratives, and are less lexically diverse [*30*]. Forensic Statement Analysis distinguishes between truthful and deceptive narratives via the *Type-Token Ratio*

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[i] The most common SCAN criteria assumed to indicate truthfulness are (1) denials of the allegations, (2) unambiguous social introductions ("Paul and I went outside" vs "we went outside"), (3) no spontaneous corrections, (4) no vagueness or indications of a lack of memory, (5) the extent to which the statement is balanced, (6) emotions described before, throughout, and after the apex of the story, (7) the correspondence between objective time (the actual duration of the event) and subjective time (how much time the subject spends describing them in his statement), (8) a chronological description with little extraneous information, (9) imprecise words such as "sometime after," "later," or "finally," (10) use of the first person singular tense, (11) the use of pronouns, and (12) a change in language about part of the event that the SCAN expert cannot justify [*30*].

[ii] SCAN is used in Australia, Belgium, Canada, Israel, Mexico, the Netherlands, Qatar, Singapore, South Africa, the U.K. and the U.S. In the U.S., it is used by the Federal Bureau of Investigation (FBI), U.S. Army military intelligence, the Central Intelligence Agency, social workers, lawyers, and fire investigators [*7,30*].

[iii] In this study, SCAN was compared to Reality Monitoring techniques. Unlike SCAN, Reality Monitoring correctly classified 71% of the truth tellers and liars.

(TTR). The TTR is calculated by dividing the number of distinct words by the total number of words in an individual's statement [*159*]. Since genuine statements are presumed to be more detailed, they should be longer and contain a greater number of unique words; therefore, the TTR for genuine statements should be higher than for deceptive statements [cf. *160*].

- TTR was shown to provide a more accurate measure of human deception than human judgments in an experiment that simulated a biological terrorism plot [*161*]. Masters or doctoral degree-level biologists, serving as study participants, met with a mock terrorist and were offered payment to make biological materials for illicit purposes. They were then interviewed by investigators with law enforcement experience, using a semi-structured, modified Cognitive Interview protocol. When the interview was complete, the interviewers made a Yes/No judgment about whether the subject had been deceptive or not, and five law enforcement and intelligence officers made the same judgment based on video records of the interviews. Response length, unique words and TTR were calculated based on transcripts of the interviews. Subsequent analyses showed the interviewers to be an average of 54% accurate, the law enforcement and intelligence offers to be an average of 46% accurate, and an index of response length and unique word to be 84% accurate. ROC curves were provided. (Note 7)

Symptom Validity Tests. Symptom Validity Tests[iv] appear to be in a category of their own, as they are neither cognition-based nor speech content-based. They are a method based on the statistical improbability that an individual can hide knowledge by acting randomly towards information of which he has genuine knowledge [e.g., *162-166*]. The test was originally developed to detect feigned sensory disorders [*167-169*] but since then has been applied to detecting feigned memory disorders [*170-173*]. SVTs also have been used in forensic settings, where suspects frequently claim some kind of brain injury or substance-induced amnesia so that they remember little or nothing of the crime [*174,175*].

SVT was used in the evaluation of a suspect for his competency to stand trial [*176*]. The suspect was charged with armed robbery but claimed that a previous diagnosis of *Lupus Erythematosus* left him with memory problems and that a stroke some five years earlier left him with blurred vision and hearing loss. There was some medical evidence for systemic *Lupus* hypertension and some hearing loss in one ear, but no evidence for the blurred vision or history of a stroke. In the SVT, the suspect was presented with instructions to choose the correct item or simply guess if he could not remember. Examples of questions were "What did the perpetrator wear? A. Dress, B. Pants;" "What type of hat did he wear? A. Felt, B. Straw;" "What was on the hat? A. Scarf, B. Flowers" [*176, p. 600, Appendix A*]. The suspect correctly answered only seven of the 29. If the suspect had been truly ignorant about all these details and only guessing, he should have answered about half correctly; getting only seven correct would have occurred by chance less than five times out of 1000 (using the binomial distribution [*177*] to calculate chance). Given the suspect's claimed memory loss, objective medical condition, and these test results, it was decided that the suspect actually had memories of the events of the robbery and was found competent to stand trial.

In experimental situations, where ground truth is known, SVTs have been shown to identify between 40% and 59% of those who were feigning amnesia [*178,179*]. A version of SVT, referred to as a 'Fixed Choice Testing Dilemma,' was deployed in the context of a military exercise. The Fixed Choice Test both identified individuals who were concealing knowledge, which required that they each be exposed to the critical items multiple times, and identified concealed knowledge within a group, which was accomplished by presenting each member of a group with a single choice [*166*]. (Note 8)

[iv] Also known as 'Expected Alternative Testing' (e.g., *165*) and 'Forced Choice Testing Dilemmas' [e.g., *166*].

Physiological Cues to Deception

Polygraph. Some form of the polygraph has been in use for detecting deception for more than 120 years [*180,181*], during which it has been a consistent topic of scientific debate [*182-188*; for a review, see *189*]. Despite a recommendation from the U.S. National Academy of Sciences that "the Federal government should not rely on polygraph examinations for screening prospective or current employees to identify spies or other national security risks because the test results are too inaccurate" [*190*], the polygraph is used for a variety of administrative and investigatory purposes by various agencies of the U.S. Government, including the Department of Justice (the FBI, Drug Enforcement Administration, Bureau of Alcohol, Tobacco, Firearms and Explosives), the Department of Energy, the Defense Intelligence Agency, the National Reconnaissance Office, the National Security Agency, the Naval Criminal Investigative Service, the Secret Service [*186*] and the Office of the Inspector General [*191*]. Polygraphs are used by state and local police for both screening applicants [e.g., 192] and suspects [e.g., *193-195*]. It also is used to test victims and witnesses of crimes [*196*].

The traditional polygraph begins with an interview to obtain biographical information, evaluate the subject's attitudes towards dishonesty and/or the test itself, and provide the examiner with a basis upon which to formulate his questions. Although this phase is unstructured, the subject's responses and general behaviors are treated as part of the examination [*185, 197-199*].[v] The next phase is generally some kind of 'stimulation test' [*204*], which is meant to convince the subject of the validity of the test – that is, that it assesses deception. These tests vary; the examiner may ask the subject to select a card and then ask questions about which card was selected. The examiner then reads the subject's responses from the polygraph record and 'identifies' the correct card. He uses a number of deceptive tactics (such as having all cards the same [*189*] or having previously memorized the order of cards [*180*]).

The first most commonly used and long dominant polygraph examination for use with suspects and pre-employment screening was the Relevant/Irrelevant test developed by John Reid in 1947 [*186,187,205*]. In the Relevant/Irrelevant test, the subject is asked a series of questions that are relevant to the issue (crime) of concern (e.g., "Have you ever conducted espionage against the U.S.?"). It is assumed that if the individual has engaged in such activities and denies it, there will be an autonomic response (that is, a change in heart rate, respiration, and/or blood pressure, as measured by the polygraph instruments). The responses to relevant questions are compared to responses to irrelevant questions [e.g., "Is today Friday?"). The assumption that there will be a difference in autonomic responding between relevant and irrelevant questions has been the object of significant debate [e.g., *165,166*]. There is no scientific support for this assumption [*184,185,189,196,200,202,206-209*]. Innocent people may experience various physiological changes similar to those guilty of a crime while taking a polygraph simply because they are anxious about being interrogated, puzzled, angered, or even amused [*210*]. The lack of standard procedures for administration and scoring makes the Relevant/Irrelevant test unsuitable for scientific evaluation and polygraph researchers have generally considered the test outmoded [*211*].

Control Question polygraph examinations. In control question or comparison question polygraph tests, the examiner compares responses to relevant questions with responses to other questions that are intended to generate physiological responses even in an innocent subject. Control questions are formulated by the examiner on the basis of the pretest interview. They are meant to be unrelated to the specific incident of concern but to be emotionally provocative. These questions play a critical role because it is assumed that a skilled examiner can formulate control questions that produce different responses in a guilty and innocent subject: the control questions should elicit emotional responses in the

[v] This is generally not standardized, but tailored to the examiner's perceptions of the subject. This introduces considerable variability and subjectivity into the test, as the examiner is essentially making a sensitive clinical psychophysiological judgment in the absence of any clinical training [*200-202*].

innocent subject that exceeds the response to the relevant question, but the relevant question should elicit a larger emotional response in a guilty subject. This places a considerable burden on the examiner [*189*].

Concealed Information [Guilty Knowledge] Test polygraph examinations. The Concealed Information Test, developed in 1959 [*212*], is fundamentally distinct from the Relevant/Irrelevant and Control Question tests because it does not assume there is a distinct physiological or behavioral set of responses associated with deception. Instead, this test is based on the scientifically-supported observation that autonomic arousal, an *orienting response*, measured as an increase in skin conductance, heart rate deceleration and respiratory suppression [*213*], is elicited by novel and/or significant stimuli [*214*]. The orienting response occurs in a guilty suspect when presented with unique knowledge about aspects of a crime.

- Typically, in a Concealed Information Test polygraph examination, a subject is given a series of multiple choice questions, each of which has six choices, the first of which is a buffer (because the first item produces a large autonomic response regardless of its identity). The next five items are one relevant (a detail of the crime scene; for example, a particular knife) and four control items (for example, other weapons). He is to respond "no" when asked about each item. The orienting response, in a successful Concealed Information Test, is uniquely elicited by the relevant item.

Experimental tests of the Concealed Information Test have shown it to be between 81% and 94% successful at identifying the guilty person, with a false positive rate less than 5% [*215-218*] and, in some instances, a false negative rate as high as 58% [*219*].[vi] Two field studies showed 98% and 42% accuracy in identifying innocent and guilty subjects, respectively [*219*], and 94% and 76% accuracy in identifying innocent and guilty subjects, respectively [*222*]. The Concealed Information Test has rarely been used in the field, however, perhaps because of the stringent requirement to keep details of the crime scene secret [*180*]; a notable exception is in Japan, where Concealed Information Tests frequently are administered within police settings [*223,224*].

Concealed Information Test with Groups. Historically, the Guilty Knowledge Test/Concealed Information Test [*212*] has been used to infer guilt or innocence using information known to the authorities. However, this test can also be used when information is uncertain, and the authorities must choose among several options. A series of options can be presented to a suspect, and the one that elicits the greatest physiological response is the one that warrants further investigation.

- For example, in one laboratory study [*225*; see also *226,276*], 12 participants were instructed to pretend they were members of a terrorist organization. They then received information about the target, location, and date of an upcoming terrorist attack. Using only skin conductance measures,[vii] an analysis at the group level showed that the specific information about the attack elicited significant increases in skin conductance responses, thus revealing all three critical items.
- This approach may also be effective when different individuals in the group have different information. For example, in one study, 52 undergraduate students were assigned to 15 independent groups, where individuals in each group possessed knowledge about two of six critical items (such that all possible combinations of the two known items were equally represented). Again using a Concealed Information Test measuring only skin conductance, three of the six critical items were identified. Additional measures (respiration and pulse) identified four of the six critical items. The combined measure, defined as the mean of the three individual measures, identified five of the six

[vi] The Concealed Information Test might be improved by measuring the P300 wave from scalp electrodes. The P300 is sensitive to the rarity and meaningfulness of a stimulus, and the amplitude varies with the strength of recognition memory [*220*]. A meta-analysis of both traditional autonomic measures Concealed Information Test and P300 Concealed Information Test studies showed that the P300 measure produced stronger effects [*221*].

[vii] Skin conductance can be measured by placing electrodes on the first and second fingers of one hand and recording and analysing the changes in conductance via commercially available computer programs.

critical items [*228*].

Neuroimaging. The neuroimaging approach to detecting deception assumes that some neural process in the brain is uniquely associated with deception, and that it can be measured directly. The most common form of brain imaging is functional magnetic resonance imaging (fMRI), which measures changes in regional cerebral blood flow triggered by changes in neural activity with a high degree of spatial resolution, although these signals are slow and integrate neural information over several seconds [*229*]. Accuracy is measured by building a statistical classification model to determine how well this model distinguishes between deceptive and truthful subjects. However, unless this model generalizes to other individuals, which often is not known, its meaningfulness is limited.

In one study on the use of fMRI, study participants were exposed to one playing card about which they should lie having seen and to another about which they should tell the truth. While in the fMRI scanner, they were shown these cards and several distractor cards. Analysis of the fMRI records showed two areas of the brain were more engaged by lies than truth telling, and all other regions were more active during truth telling than lying. A generalized accuracy rate of 77% was achieved [*230*]. A mock crime study, where guilty participants had to pick up an envelope marked confidential and destroy a CD with crime relevant information on it, and innocent subjects simply had to pick up an envelope, showed a somewhat lower accuracy rate of 67% [*231*]. A summary of 10 fMRI deception detection studies showed an average accuracy of 82%, with an average sensitivity of 84% and specificity of 81% [*232*].[viii]

Research on the use of fMRI for detecting deception is only about a decade old, and critical questions have not been addressed, such as the effects of individual differences, social context, instructions to lie, and possible counter-measures [*232,233*]. Given the paucity of studies and the difficulty of using the apparatus, this method is not suitable at present for field applications.

Reaction Time Tests. Reaction times are among the most extensively studied behaviors in psychology [*234*]. They have especially been used to gain insight into processes of which people are unaware or may not want to report [*235*]. The Concealed Information Test has been shown to be highly accurate detecting deception when, rather than being connected to a polygraph, the measure is reaction time: the subject has to press unique buttons as fast as possible for "Yes" and "No" responses.[ix]

A summary of nine Concealed Information Test studies, using reaction times as the outcome measures, showed this test to be highly accurate in distinguishing truth tellers from liars, with an accuracy between 54% and 100% and a small false positive rate (between 0% and 4%) [*234*]. A series of studies found that the Reaction Time Concealed Information Test can be used to identify faces an individual knows but is trying to conceal [*236*; see also *237,238*] or to detect concealed autobiographical information [*239*].

[viii] Sensitivity = true positives/(true positives + false negatives) and specificity = true negatives/(true negatives + false positives). For a test to show such high rates of both, the instances of false positives and false negatives must be relatively low.

[ix] For example, an examinee is suspected of stealing a white Mazda used in a bank robbery and only the police and the guilty person know about the car. The sequence of questions could be, 'What car was used in the robbery? Was it a ... blue Chevrolet? . . . green Mercedes? . . . red Toyota? . . . yellow Peugot? . . . .grey Mustang? . . .white Mazda?' The subject is instructed to press "No" to every car he thinks was not involved in the robbery, but to press the "Yes" to "Yellow Peugot." For a both guilty and innocent subjects, the outcome is that the 'No' button is pressed quickly and accurately for the irrelevant items (Chevrolet, Mercedes, Toyota, and Mustang) and the "Yes" button is pressed slower for the probe item (Peugot). However, the guilty subject is also slow to press "No" to "white Mazda" [*234*].

Implicit Association Test (IAT). The IAT measures implicit attitudes without the individual's awareness [*240*]. The IAT was designed to avoid answers being censored by what the subject thinks is the socially acceptable response [*241*]. In a series of six IAT experiments, one of which was to assess what crimes two convicted murderers had committed, the IAT distinguished between truth-tellers and liars with a sensitivity of between 88% and 100% and a specificity of 87% to 88% [*242*]. Although not every application of the IAT has been as successful, it has been suggested that the IAT might be useful not only to find out what an individual has done, but also what he intends to do and even his motives for doing so [*234*].

Eye tracking. Pupillary size, which can be measured remotely, has been successfully used as a measure of deception in groups within Controlled Question Tests [*243*; see also *244,245*]. However, because the pupil increases in size as a function of arousal, emotion, and increased cognitive processing [*246*], the test must be carefully constructed so as to discriminate deception from these other more general processes.

Voice stress. Voice stress tools, used by law enforcement and the private sector [*247*], are based on the notion that the human voice produces inaudible frequency changes [microtremors] in the 8–12 Hz range that disappear under stress. However, there has been no scientific evidence to support this assertion [*248*].

Thermal imaging. Several studies have claimed to show that when an individual is interviewed while being deceptive, blood flow increases to the face, which results in an increase in facial temperature, measurable via thermal imaging [*249-251*]. A comparison of the efficacy of thermal imaging vs. verbal behavior as indicators of deception showed that when passengers at an airport were questioned about their forthcoming trip, those that lied about the trip (at the request of the experimenter) contradicted themselves more than the truth-tellers, providing implausible stories [*252*]. Facial temperature was observed to increase in the liars over the course of the interview, but discrimination between liars and truth tellers was less accurate via the thermal imaging measure than via the assessment of verbal behavior.

Cross-Cultural Deception Detection

Cultural norms and expectations are likely to affect many aspects of an intelligence interview or interrogation, including efforts to determine the validity of the information being collected. Social decision making [notions of fairness, cooperation, and punishment] [*253*], sense of self-agency and personal choice [*254*], range of moral principles [*255*], expressions of emotions [*256*], the understanding of the meaning of 'crime' and 'lying' [*257,258*], attitudes towards honesty and deception in others [*259*], the nature of secrets [*260*] and deception [*14*], stereotypes about deceptive behavior [*261*], the etiquette of turn-taking [*262*], and responses to influence strategies [*263*] have all been shown to be sensitive to cultural norms.

Deception is more difficult to recognize across a culture than within a culture. When Jordanian and U.S. subjects watched videotapes of individuals from both countries tell a truthful or a deceptive story about someone they liked, the accuracy of within-cultural detection was 56%, whereas the accuracy of cross-cultural detection was basically chance at 49% [*264*]. Similar outcomes have been found among American, Jordanian and Indian [*265*], and Korean and American [*266*] students. In some cases, differences in normative non-verbal behavior may lead individuals to think someone from another culture is being deceptive when he is not [*263, 266-268*]. These outcomes stand in contrast to the observation that people from different countries have similar beliefs about the behaviors associated with deception [*270*]. For example, over 65 % of respondents from 75 countries and 43 languages listed gaze aversion as an

indicator of deception (followed by nervousness, incoherence, shifting postures, and self-touching).[x]

Research has shown that there are several moderating factors in determining the impacts of cultural differences on detecting deception [*14*]:

- *Cultural differences in the acceptability of deception* means that what is deception for a person from one culture may be good manners for a person from another culture [*271,272*], such as when preserving the other party's honor [*273*] or protecting one's own family [*274*].
- *Cultural differences in feelings about lying* mean that individuals may feel little or no guilt when they lie if lying protects others in their group [*275*].
- *Individuals speaking in the same language* are more likely to believe each other than when speaking in a second language [*276-278*].

Some significant obstacles to determining validity in cross-cultural interactions have been shown to include [*14*]:

- *Authority role of the interviewer:* Many East Asian cultures value hierarchies and are likely to be respectful towards an interviewer who presents as such; silence as deference to authority [*279*] should not be mistaken for refusing to talk to hide knowledge. Research also has shown that authority can induce conformity, so that individuals may be likely to agree with a story presented to them from an authority figure, even if the story is not the true one [*280*], an effect that is exacerbated by stressful contexts [*281*].
- *Storytelling* – where part of the narrative includes the background of the actors and the wider context, and in which participatory feedback is expected – sometimes is interpreted as deception by individuals who come from cultures that provide more linear accounts [*282*].
- *Resistance* is often interpreted as a sign of guilt [*283*]. Suspects may appear resistant because they do not trust the police to believe them or because they fear incriminating themselves [*284*].
- *Face saving* is of paramount importance for individuals from some cultures, even to the extent that they may provide false information to 'save face' [*14*].
- *Contextual details*are important in investigative interviews (see, for example, the Cognitive Interview described above), these may be lacking in individuals from collectivist cultures, who are more likely to remember relationships among individuals in a narrative than objects in space [*285*].[xi] When recalling a story, Asian Americans parse it into fewer segments than do Americans [*286*], which is consistent with the tendency of Asians to view objects and events as related [*287*].
- *Autobiographical details* are more likely to be remembered differently for people of European heritage, who tend to remember personal experiences and feelings, than for people of Asian heritage, who more often report memories of group actions and interpersonal relations [*288*]. European North Americans are more likely to remember social situations from their own perspective, whereas Asian North Americans are more likely to visualize memories from the perspectives of others [*289-291*].
- *Interpersonal coordination* is assumed to be an indicator of rapport [e.g., *292*] – consists of non-verbal movements by one person that coincide with the timing and rhythm of the person with whom they are speaking [*293*]. These occur without awareness and generally increase cooperation and liking [*294*]. For example, interacting individuals may both touch their face [*295*] or mutually change posture [*296*]. A recent series of studies have monitored interpersonal coordination across cultures and found differences among cultures across the course of an exchange. For example, interpersonal coordination increased across an interview when British study participants were instructed to be

[x] All these beliefs are erroneous; these are not reliable indicators of deception [*1*].
[xi] This difference has implications for methods of deception detection such as Criteria-Based Content Analysis, which counts contextual cues as indicators of truthfulness.

deceptive, whereas South Asians study participants showed a decrease across the interview while also instructed to be deceptive [*297-299*].

- *Individuals from different cultures are likely to favor different words*. For example, when UK study participants who self-identified as Arab, Pakistani, North African, or white British wrote one truthful and one deceptive statement about a personal experience, there were more deceptive elements by the Arabs and Pakistanis than for the North African and white British subjects, and the use of spatial information was more indicative of truth in Arab and white British subjects, but more indicative of deception in North African and Pakistani subjects. All the participants used more positive emotional words when they were lying, which has been otherwise hypothesized to occur as people try to compensate for lying with overly positive language [*300*]. This study was replicated with study participants that self-identified as North African, South Asian, white European and white British [*14*]. Again, individuals from collectivist cultures (North African) provided more spatial details when being deceptive than when being truthful, whereas individuals from individualistic cultures (white British) reduced such details when lying. And again, there were no cultural differences in terms of emotion words, in that deceptive subjects used more positive emotional words when telling lies than when telling truths.
- *Some memories are better accessed in their original language*. For example, Russian-English bilinguals remembered more from their Russian-speaking lives when interviewed in Russian and more from their English-speaking lives when interviewed in English [*301*]; Hispanic bilingual immigrants in the U.S. reported retrieving memories about their country of origin in Spanish and memories about living in the U.S. in English [*302*].

NOTES

1. The HIG has sponsored three field validation studies to date:

- *A field evaluation of the eye-closure interview with witnesses of serious crimes* [*1*]: Police interviewers from the South African Police Service Facial Identification Unit were randomly assigned to receive Eye-Closure Interview training or not. Eye-closure, a recommended (although optional) part of the Cognitive Interview, consisted of one instruction: asking eyewitnesses to serious crimes (including robbery, murder and rape) to keep their eyes closed during those parts of the interview when they are being asked to recall the event and describe the perpetrator. Compliance with the instruction was between 78% and 100%. Analyses of interview transcripts showed a tendency for witnesses in the Eye Closure condition to report more information about the perpetrator and fewer irrelevant details. Independent assessments of the transcripts by forensic experts showed that the details offered in the Eye-Closure condition were more forensically relevant [see also *2*].
- *A training validation and field assessment of science-based methods of interrogation* [*3*]. In 2014 – 2015, in four iterations across a period of five months, 120 agents (80 criminal investigators and 40 counterintelligence agents] from the Air Force Office of Special Investigations were given a one-week course in active listening, sense-making, priming, social influence, Motivational Interviewing, the Cognitive Interview, and cognitive-based cues to deception. Each criminal investigator provided a video record of an interrogation he or she had conducted before and after training. The video records were transcribed and all personally identifying information was removed before the data were given to an independent group of researchers, who analyzed the transcripts for adherence to the methods as they were instructed and impacts on outcome (details, completeness, forthcomingness, cooperation and resistance). To date, analysis of 67 pre- and post-training interrogations has revealed significant shifts in the use of science-based interrogation tactics, including increased use of open-ended questions and positive affirmations that facilitated conversational rapport, and increased use of core elements of the Cognitive Interview. Post-training interrogations were also shown to be more productive – producing more details and complete narratives, and more forthcoming and less resistant subjects. Finally, the use of good questioning tactics, active listening skills, and cognitive interview elements were significantly associated with more detailed narratives and cooperative subjects.
- *A field validation of priming an interview room* [*4*]. The Southwest Detective Division of the Philadelphia Police Department modified an interview room to make it less stark. Fourteen detectives were randomly assigned to either this modified, 'warmer' room or the standard interview room to conduct complainant interviews for instances of non-lethal shootings and armed robberies. Subsequent to the interview, both the detective and the complainants filled out a brief questionnaire. The detectives were asked about the interpersonal dynamics between themselves and the complainants, and how much information the detectives believed the complainants had disclosed. The complainants were asked the same questions, in addition to questions about their perceptions of the interview room. To date, data have been collected from 81 detectives and 52 complainants. The complainants reported that the 'warm' room was more comfortable, but both detectives and complainants reported more favorable outcomes in the control room; that is, greater mutual respect, less difficulty being interviewed, and higher information yield. The researchers suggested that the findings, contrary to experimental studies conducted in laboratory settings, could be accounted for by the "warmer" room having unanticipated effects on the detectives, who may have been less comfortable in the less familiar room.

2. Research in procedural fairness judgments began with studies of satisfaction among individuals involved in adversarial and nonadversarial legal procedures [*5*], and expanded to include studies of procedures in nonlegal dispute resolution [*6*], political decision making [*7*] and organizations' evaluating, rewarding and transferring workers [*8*]. One of the most robust findings has been that allowing disputants' *voice*, i.e. the opportunity to express their opinion as opposed to being denied such opportunity, leads to greater perceptions of being treated fairly [*6,9,10*]. This is reflected in the preference of Americans for allowing disputants 'process control' over procedures that vest control in the decision maker [*11*]. There are some data to suggest that *voice* is of less importance among

disputants from more collectivist cultures [*12*] but the importance of voice, trustworthiness, and neutrality among decision-makers has been demonstrated across cultures [*13*].

In addition to *voice* (demonstrated by an interviewer engaging in active listening without interrupting the subject), the key principles of procedural justice in the criminal justice arena are respect for a subject's person, culture and religion; *trustworthiness* (or trust in benevolence; [*13*], demonstrated by transparency, empathy and genuine concern for the interests of the subject), *status recognition* (demonstrated by treating a subject with dignity and respect appropriate for a full-fledged member of the group), and *neutrality* (avoiding judgments and differential treatment based on race, religion, etc. [*14-16*]; for meta-analyses of procedural justice studies, see [*17,18*]). If individuals have *voice*, the authority is viewed as trustworthy, the process is seen as neutral, and the individual's rights are respected. The message conveyed is that the individual is valued and respected by the social group or authority. The procedures therefore are judged to be fair not because of the outcome that is pursued or obtained, but because of the sense of being socially valued.

People are most sensitive to issues of procedural justice when they are uncertain whether an authority will exploit them or not [*19,20*], when they feel vulnerable and uncertain [*21*], and when their autonomy appears to be threatened [*22*]. Procedural justice effects are strongest when the authority is a member of the same group [*23*] or when the individual identifies with the authority's group [*24*].

The concept of procedural justice was included in an analysis of interview data from an international sample of police from Australia, Indonesia, the Philippines, and Sri Lanka [*25*]. Respondents were asked about their experiences with circumstances of arrest, interview preparation, interview strategies, and detainee responses in instances of interrogations of high-value detainees (defined as suspected terrorists or, in some cases, suspects of homicide and home invasion). Social strategies, defined as use of reciprocity, rapport and procedural justice (showing respect, trust, neutrality and respecting voice) were predictive of disclosure of personally incriminating information.[i] There was consensus across the groups on the importance of being respectful of subjects' rights and police trustworthiness, with less recognition of voice and police neutrality. Emphasis on voice varied depending on culture: Showing neutrality and respecting voice were rated as more important for the practitioners from the Asia-Pacific than from Australia.

To date, procedural justice research has focused more often on the concerns of those impacted by decisions and less on the salience of the procedures on decision-makers [*15*]. Although the data are limited, decision makers such as appellate and state court judges appear to be more concerned with *distributive justice* (rather than procedural justice), which depends on the societal benefit of the outcome of a criminal justice proceeding [*26*]. This may be because authority figures are less concerned about their group standing (which is already high) or because perceptions of the importance of procedural justice are less when the subject of such is judged to be undeserving of such treatment [*27*]. When 'interrogators' in a simulated interrogation situation evaluated the fairness of coercive interrogation procedures, those in the role of interrogators thought that the outcome produced by a coercive interrogation would be as fair as that produced by a noncoercive interrogation, whereas those in the role of suspects or observers judged the outcome of a coercive interrogation to be less fair.

3. In one study, experienced interview and interrogation instructors from the Federal Law Enforcement Training Center (FLETC) in Brunswick, GA, were trained on the Cognitive Interview [*28*]. The instructors then interviewed other FLETC instructors about one of 11 different meetings ('pre-operational' or planning meetings that preceded a field exercise in conducting surveillance [three meetings], a search warrant [five meetings], an undercover operation [one meeting], or a sequence of investigative interviews [two meetings]). The interviews were conducted either using the FLETC 5-Step method[ii] or the Cognitive Interview; these occurred between three and 43 days after the subject event. The 5-Step interviews began with an introduction (e.g., name, credentials, and purpose of the meeting) followed by rapport building (e.g., topics that interested the interviewee, making eye contact, and smiling). Interviewers then asked open-ended questions, followed by closed questions to fill in gaps of event-relevant information (e.g., who, what, when, where, and how). At the conclusion, the interviewers summarized the

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[i] These police officers reported that about one in 10 (12%) of detainees never disclosed, and one-third (35%) of detainees disclosed early in the interview.

[ii] Available at http://www.fletc.gov/training/ programs/behavioral-science-division.

information provided by the interviewee, clarified when necessary, thanked the interviewee, and provided the interviewee with his or her contact information.

The Cognitive Interviews were similar in some respects to the 5-Step interviews in that both included rapport building, avoided leading questions and interrupting the interviewee, allowed for long pauses, and used follow-up questions to address critical missing information. However, the Cognitive Interviews also established a unique social dynamic by giving a series of instructions at the beginning of the interview. This was done by asking the interviewee to actively generate information and not wait for questions, report as much information as possible in as much detail as possible, avoid guessing, and indicate when they did not know something. After interviewees had completed their first free narrative response, the interviewers then reinstated the context of the event by requesting the interviewee to close his or her eyes, place himself or herself back at the scene, and describe the event in detail again (e.g., what he or she saw, heard, and smelled).[iii] Interviewers then asked the interviewee to sketch a diagram of the subject event and to narrate as he or she sketched; this tactic provided an alternative perspective on the event which elicited more memories. Finally, the interviewers extended the functional life of the interview by explaining to the interviewee that after the interview, he or she would remember more details, and when that happened, he or she should contact the interviewer with this information. The Cognitive Interview elicited approximately 80% more relevant information than the 5-Step protocol did and at equally high accuracy rates. These findings are comparable with the effects others have found in most laboratory studies [*29-31*].

In addition to context reinstatement and change of perspective, carefully selected *mnemonics*[iv] have been shown to elicit more information than otherwise gained. There is no standard set of mnemonics, and mnemonics must be tailored to the objective of an interview. However, there are some general guidelines that may be useful, as illustrated in two experiments that examined memories for recurring meetings [*32*]. The goal in the first experiment was to elicit information about family meetings[v] (proposed as an analog for other meetings that occur both frequently and semi-regularly in a variety of locations and venues, and involve multiple attendees at more than one meeting). It was assumed that the frequency and partial overlapping characteristics of such meetings would make it difficult to remember particular details about individual meetings; that is, the *source* of the memories may have been difficult to recall [*32*].

For both experiments, the researchers constructed a set of mnemonic prompts based on the nature of memories - in particular, autobiographical memories - and how they are stored and best recalled:

- *Extend the interview time.* The total amount of information recalled should be related to the total time spent attempting to recall [*33*], but retrieval time is limited during an interview. The study participants were therefore instructed to think about the recall task prior to and after the interview, effectively extending the time spent attempting to recall.
- *Family tree.* It was assumed that a key element of family events is the set of family members who attend the events. Therefore, anything that generated the names of family members, e.g., a family tree, was assumed to provide effective retrieval cues for recalling the family events [*34*].
- *Timeline.* People often associate such gatherings with temporal markers, for example, life stages or transition points [*35-37*]. The respondents therefore were asked to use a timeline, to identify salient periods or transitions.
- *Normative cues.* Family gatherings are often organized around salient experiences in society (e.g., weddings and religious holidays [*34*]). The respondents therefore were told to use normative cues to recall otherwise unmemorable gatherings that occurred according to cultural norms.
- *Derived cues.* Members of a social network share common cognitive frameworks for representing important events. Therefore, effective retrieval cues for these participants were derived from other people in the same social network. For example, many Americans think of Thanksgiving as a time for family gathering and for eating turkey; therefore, both 'holidays' and 'special food' should prompt memories of

[iii] It is common to instruct subjects regarding the sensory mnemonics prior to the first narrative [29,30].
[iv] A mnemomic is a device or tactic that assists in remembering something.
[v] It should be noted that information provided by the participants was corroborated for both experiments. This was done by soliciting independent recollections from other family members or friends.

family gatherings.

- *Self-generated cues.* Families have different reasons for gathering. Because individuals organize memories of those gatherings in unique ways [*38,39*], determining each participant's unique way of representing family events was therefore used to generate additional cues.
- *Subcategorizing.* The retrieval of a particular memory can be inhibited because there are too many cues associated with it [*40*]. Therefore, the participants were provided cues that referenced a smaller set of elements. For example, the category of family gatherings might be broken down into family gatherings for various holidays.

In Experiment 1, study participants (undergraduates at an American university] were contacted by telephone 24 hours prior to a scheduled interview and asked to estimate how many family events they experienced in the past year. Half of these participants were asked to create a list of 'family events' and a *family tree* for four consecutive generations. The other half were asked additional questions to camouflage the questions about family events and to discourage these participants from thinking more about family events prior to the interview. During interviews following phone contact, all participants were told that they would discuss in some detail the family events they had experienced in the past year. After three requests to recall as many details about these past events as possible, participants either reviewed their family tree or constructed and reviewed a family tree (control condition). While reviewing family trees, participants were asked to think about each person identified and to report any family events that they recalled. Participants then were given a sheet of paper with a horizontal *timeline* populated with the months of the year, and asked to write-in all the family events they could recall. After they indicated that they could not recall any more events, they were asked to think about any gaps left in the timeline and whether any family events may have occurred in those gaps. They were also asked to think about major events on the timeline (such as trips and relocations) and whether any additional family events may have occurred prior or subsequent to those major events (providing *subcategorizing mnemonic prompts*). Following the timeline activities, participants were asked to think about civic and religious holidays, celebrations, milestones, and vacations (*normative event cues*) and to report any associated family events. These normative cues then were fed back to the participants, who were asked if they recalled any family gatherings for such reasons. Following the normative events, participants were asked to think about family events in terms of a set of *derived cues*: events that made them happy or sad, at which the food was good or bad, which made them proud, for which they dressed up, wore special clothing, or bought new clothing; for which they bought, made, or gave a gift; at which the whole family was together; at which they danced or there was dancing. Finally, participants were asked to think about events on their mother's versus their father's side of the family, events that focused on different age groups (e.g., funerals vs. children's birthday parties), and events that occurred in different locations (e.g., in their homes vs. away from home) (again, *subcategorizing prompts*).

The set of mnemonics used here elicited 70% more recollections than were elicited via a free recall: 35 of the 36 participants recalled additional events in response to the mnemonics. Even after participants claimed they could not recall any additional events, mnemonics more than doubled the initial amount of information recalled. For example, if participants recalled 10 events before claiming not to remember anything more, they were able to recall an additional seven or eight events in response to the mnemonic prompts. This suggests that respondents were poor both at estimating how much knowledge they possessed and the amount of knowledge available to them.

This report is described in some detail here as an example of the use of mnemonics tailored to the objective of the interview and the likely characteristics of the subject. It is important to note here that the mnemonics were carefully constructed to be appropriate to the goals of the interviews, which were to identify information about family meetings, and that some of the cues referenced events common to the population from which the participants came. For example, some mnemonics referenced American holidays and events that are celebrated by most American families, such as birthdays. Such mnemonics (e.g., normative cues) required an in depth understanding of American culture. However, other cues – *derived, self-generated, subcategories* – could be constructed to be implemented within other cultures because they reflect fundamental processes of human memory.

In Experiment 2 of the same report, mnemonic prompts were introduced within the context of a Cognitive Interview. The mnemonics were modified based on the results of analyses of what worked and did not work in Experiment 1 (here, the pre-interview instructions and self-generated cues were eliminated). In Phase 1, all the participants reported family events using the same procedure as in Experiment 1, with similar results: Participants named more than twice as many events when given the mnemonics than when reporting only via a free narrative. In

Phase 2, the participants were randomly assigned either to a control interview or a Cognitive Interview. For both, participants were asked to describe one of the events described in Phase 1. In the control interview, participants were asked twice to provide as many details about the event as possible, and after they completed a second recall, they were asked a set of specific questions (Where was the event held? When did it occur? When did it begin? How long did it last? Who was there? Who organized the meeting? With whom did you speak? What was discussed? What future plans were made? Did anything unusual or memorable happen? Did you receive anything tangible? To whom were you introduced? What did you learn?). In the Cognitive Interview, the participants were told they would do most of the talking during the interview and to report as many details as they could even if these seemed insignificant. A free recall followed, after which the interviewer engaged the participant in context reinstatement, selecting one moment during the event and asking the participants to close their eyes and think about the event – gathering all the sensory details they could. Once they had imagined themselves back in that moment and place, they proceeded with their description. They then drew a sketch of the event and provided a verbal description as they drew. Following another opportunity to provide additional information, these participants were asked the same set of specific questions as those in the control interview condition. The Cognitive Interview resulted in more than a 100% increase in the number of details recalled. This gain held across different categories of details as well, including person, conversation, action, and setting details.

4. Granhag and Hartwig [*41*] provide an example of SUE tactics used in an interview [pp. 241 – 244], assuming that the suspect is guilty:

- Phase 1: The interviewer asks for a free narrative without providing any evidence. The *suspect's perception of the evidence* is that the interviewer knows something, but he is unsure of what; perhaps, since none was offered, the interviewer has little. The suspect's *counter-interrogation strategy* is to avoid providing any incriminating information in his *verbal responses*. It should be apparent that details are missing.

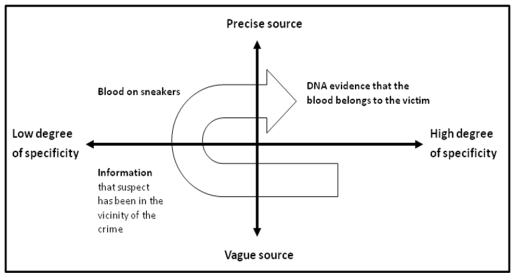

Figure 3. Evidence Framing Matrix. Each bit of evidence should be considered in terms of the Evidence Framing Matrix as part of the planning for an interview using SUE. Redrawn from [*41;* see also *42,43*].

- Phase 2: After the free narrative, the suspect is still unsure of what evidence the interrogator possesses. The interviewer asks the suspect to repeat his narrative, and follows this with specific questions in order to pin the suspect down to an exact version of the event he is recalling. For example, imagine a suspect denying having been close to the victim and having been at the scene of the crime. Further imagine that an analysis shows blood from the victim under the suspect's sneakers. If confronted with this evidence, the suspect may state that his many friends run in and out of his flat all the time, borrowing money, food, beer and clothes. Instead of having to disprove this, the interviewer should have exhausted this alternative explanation prior to disclosing the evidence: "Do you live alone?" "Who has access to your flat?" "Do you borrow household items, food, clothes, etc., from your friends?" "Do they borrow these things from you?" [*41, p. 242*].[vi] If, after answering these questions, the interviewer now begins to disclose the evidence (using the Evidence Framing Matrix) as a guide, (e.g., by saying "We have some evidence you were in the room where the body lay,") the suspect must deny being there, resulting in *statement-evidence inconsistency*.
- Phase 3: If the interviewer then makes the evidence more specific (e.g., "One of your sneakers has blood on it") alternative accounts of how the blood might have got there have been exhausted, and the suspect can only deny or make *within-statement inconsistencies* ("I looked into the room" after denying being in the room at all).[vii]
- Phase 4: Now the suspect might come to think that the interviewer has more evidence than he initially thought, so he adopts the *counter-interrogation strategy* of changing what he says to be consistent with the evidence. This produces more within-statement inconsistencies.
- Phase 5: For several pieces of evidence, the interviewer confronts the suspect with his own statement-evidence and within-statement inconsistencies. The suspect may now come to think that the interviewer has more

[vi] Note that the answers to each of these could be independently verified by a third party.
[vii] It is important to note that the research indicates that 'innocent suspects' tend to present statements with virtually no within-statement inconsistencies [*43*].

evidence than he originally thought, and he adopts yet another counter-interrogation strategy, which is to provide information that he thinks the interviewer already has so as to appear to be forthcoming. A fortunate outcome might be that the suspect provides information the interviewer did not have [*44*].

5. An example of a Model Statement: *"So I was walking down the middle of the grid but I was advised to go to one side as the cars were coming in, so's not to get run over! I remember looking up at the grandstand on my right and there were a fair few people stood there watching the grid. I walked down towards position 11 which is where Tom was located. I remember looking quite closely at some of the pit girls which you would as a man! So I walked past, I was on my own at this point and I got out my phone to do a little bit of filming as it's not every day that you get to be on the grid at a Formula 2 race!"* [*45*].

6. In the field experiment comparing behavioral indicators screening with CCE screening [*46*], 97 study participants who were part of an airport security staff of 866 from five international airports were randomly assigned to receive CCE training or to operate on the basis of the training already provided, which was to be generally aware, look for nonverbal cues believed to be indicators of deception, use scripted questions concerning a passenger's travel itinerary and luggage, and check for travel documents such as passport, tickets, etc. CCE training included instruction on rapport-building, information gathering, decision making, evaluation of evidence, and how to handle special travelers such as the young, old or passengers with specific religious or cultural needs, and those traveling in groups. Two groups served as passengers: 204 mock passengers, recruited by advertisement to pass though a security interview without detection, and 204 genuine passengers, matched to the mock passengers for age and nationality. Mock passengers were provided false information regarding their names, date and place of birth, and cover stories about where they work and where they grew up one week before the study began. They were encouraged to make their cover stories convincing. (The research team assessed these cover stories twice during the week, to ensure that the individuals could talk for at least two minutes in their undercover persona.) Once at the airport, mock passengers joined genuine passengers in security lines for outbound long-haul flights. They were then interviewed by the security agents, who were fitted with audio recorders.

Example of questions asked in this study are shown here because they demonstrate the use of unanticipated questions and a method for constructing such questions, which must be reasonable to both truth tellers and liars but more difficult for the latter than the former. The CCE has three phases: rapport-building, cycles of information-gathering, and veracity-testing. However, the questions within each phase are not scripted. Rather, the agents were taught a process to derive unanticipated questions in real time. Novel questions were composed by selecting combinations of topics (*education, family, travel, work, skills, hobbies*, and *interests*), questions about *past, current* and *future* events and about either the *passenger* or *others*. The questions varied in structure (focusing on spatial or relational details) and style, being more open when seeking general information and more focused for tests of specific knowledge. The questioning tactic that begins with general questions and then proceeds to more focused questions has been depicted as a *Funnel Strategy*, with the top of the funnel representing the broad questions and the neck of the funnel the more focused questions [*47*].

- *Rapport building remark*: "Good morning, really sorry for the wait. How are you this morning? So how was your trip to the airport today, what with all this snow it must have been tough getting here?"[viii] Any passenger was expected to be able to answer this truthfully. This is followed by a bridging remark that lets the passenger know what is happening: "OK, as part of our security process, I'm just going to ask you a few questions, to get to know you a little."
- *Information gathering*: Open-ended questions are composed on the spot from the domains of topic, temporality, focus, and information. For example:
    - The agent may ask about the passenger, "Can you tell me a little about your highest educational qualification?" When the passenger answers, "high school," the agent asks "who was your high school principal?" In this instance, the topic was *education*, temporality was the *past*, the focus was the *passenger*, and the unanticipated question was to ask about the principal (which could be verified by independent sources]. A truthful passenger could answer this easily; for someone with a cover story, this was likely to be unanticipated.
    - Another bridging remark is made, "Thanks. (Looks at passport.) I see you do a lot of traveling."

[viii] The examples here are taken directly or paraphrased from the original report [*46, table 1, p. 79*].

Another cycle is initiated: "Tell me a little about the family members you may be visiting in the next year." In this instance, the topic was *family*, temporality was the *future-recent*, the focus was *others*, and the unanticipated question was to ask about planning. When the passenger answers that he will visit his brother who lives in X, the agent asks a more focused question, "What part of X does he live in?" and "How long does it take to drive from the airport to where your brother lives?" The latter can be independently verified.

  - Following another bridging remark ("OK, that's not too long a trip I guess") a third cycle is initiated. Here, in this instance, the topic was *work*, temporality was *current*, the focus was the *passenger*, and the unanticipated question was to ask about a particular location (which could be verified by independent sources): the agent asks, "OK, so explain to me who you work for?" When the passenger replies, "Company, Z" the agent asks both what the company does and where their headquarters is.

- *Completion*: The agent thanks the passenger and tells him to proceed to the check-in desk.

Analysis of the audio tapes showed that that both mock and genuine passengers talked significantly more and revealed more information when screened using CCE than when screened using the standard methodology. It is important to note that whereas the deceptive passengers screened using CCE tactics were more likely to be detected, there was no increase in false alarm rate. The answers across the three cycles became shorter for the deceptive passengers, whereas the amount of information provided by the genuine passengers did not.

7. Two studies using TTR as a measure of deception found – unexpectedly – that TTR was greater for *interviewers* when speaking with study subjects telling false stories than when speaking with subjects telling truthful stories. The stories were elicited with a modified Cognitive Interview, which, as described above, has been shown to elicit spatial, temporal and situational details in truthful interviewees. This outcome was interpreted to mean that the interviewers had to work harder to get a complete narrative from those who were telling cover stories:[ix]

- Non-U.S. citizens from Morocco were interviewed about their home country, where they lived presently, and what they did for a living. Truth tellers answered honestly; deceptive participants were told to be honest about where they came from in Morocco, where they lived in the U.S., and whether they were married – but to be deceptive about all other aspects of their stories. The interviewers used a modified Cognitive Interview (consisting of elicitation of a free narrative, a sensory and an emotional prompt, and the reverse order mnemonic). Speech content analysis did not reveal any significant differences in unique word count, response length or TTR for the interpreter's speech when translating for truthful vs. deceptive participants. However, differences in all three metrics were observed in the speech of the interviewer when speaking with truthful vs. deceptive participants: the unique word count average was 73 and 103 for truthful and deceptive subjects, respectively; the response length was 133 and 223 for truthful and deceptive subjects, respectively, and TTR was 0.57 and 0.49 for truthful and deceptive subjects, respectively. The classification accuracy was 67% based on TTR [*48*].

- Native Vietnamese-speaking study participants provided either a genuine or a falsified account of their identity and profession in a modified Cognitive Interview (consisting of the elicitation of a free narrative, a sensory and an emotional prompt, and the reverse order mnemonic). The accounts were given in Vietnamese and translated to the interviewer via an interpreter. Analyses of the transcribed speech of the study participants showed no differences in unique words, length of responses or TTR. Again, however, the speech of the interviewers was altered significantly when interviewing a deceptive witness: they used more unique words, talked longer, and had a higher TTR [*49*]. Classification accuracy was 88% on this measure. A Response Operating Curve (ROC) for the interviewers' speech was included in the report.[x]

8. In a 2012 SVT experiment [*50*], study participants were asked to conceal the fact that they had gone to a particular room to carry out 'illegal activity.' They were then presented with SVT test items verbally rather than in a written format, both to better hide from the participants how many items were on the test and to increase cognitive

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[ix] It should be noted that in these studies, the interviewers did not know whether the person they were interviewing was telling a truthful story or a cover story.

[x] ROC analyses are useful for practical applications of such research, since, in the real world, practitioners are not comparing groups of truth tellers with groups of liars.

load [*51*]. The test items were descriptions about various aspects of the room, for example, the type of computer, the music playing, the location of the room (these items were independently shown to be easily memorable]. The items were presented in pairs, and the participants were instructed to select one of the word pairs. On each selection, the correct item had a 50% of being selected. Twelve choice-opportunities were chosen because "in the real world, investigators may struggle to develop tests with more items, either because the crime does not have more than 12 testable details, or because it may be undesirable to reveal some information" [*50, p. 5*]. 42% of the guilty participants scored below chance on the SVT, whereas only 6% of the innocent participants (who had never gone to the room at all] did so. A ROC graph was computed for all participants; a decision rule of 'everyone scoring below four [incorrect] items is guilty' yielded 93% of the innocents and 42% of the guilty.

- As described above [*50*], the researchers provided their participants with 12 opportunities to choose between two items; on each choice, the correct item had a 50% chance of being selected. Increasing the number of items offered within each choice changes the likelihood that avoiding a particular item can be detected (for example, if there are three items presented, each has a 33% probability of being chosen by chance). In one three-item study [*52*], researchers offered 36 opportunities to choose among three different items to a group of non-U.S. citizens from Morocco currently residing in the U.S. Half the participants had received briefings about a suspected criminal, where they were shown photos of the individual – identified as a 'known drug dealer'– the car he drove, and his favorite restaurant. Thus, half the participants had 'guilty knowledge' and half did not. The Fixed Choice test consisted of presenting each participant with 12 cards, each with three choices (repeated three times, each time in a different order). The critical item (the face, car or restaurant, corresponding to the briefing) appeared only nine times in each series of 12 cards. The critical item also appeared an equal number of times on the left, middle or right. 'Foil' items appeared the same number of time as the critical items in order to control for the effect of repeated exposure to an item.

  Following testing, ROC graphs were constructed to describe how well the number of hits on a critical item would assist in detecting which individual participants were concealing information. Coordinate points on these graphs indicated that if an investigator let a suspect go who had chosen a critical item four or more times, he was likely to be 99.9% correct in his decision. A regression analysis showed an overall test accuracy of 89.5%. The test results also could be used to identify which items were the critical items (of interest if the investigator had not known which items were critical).[xi] This study, which used interpreters to administer the test, was replicated with Vietnamese [*53*] and Russian [*54*] immigrant participants.

- As an example of the use of a Fixed Choice Test to identify concealed knowledge within a group, 34 of 73 U.S. Army Special Forces (Green Beret) soldiers enrolled in a military survival school training were 'secretly' briefed about a subversive group engaged in disruptive activities [*55,* see also *56*]. Color slides provided seven pieces of critical information: the size of the group, the type of gun and type of improvised explosives used, and the type, date and location of target to be attacked, as well as the identity of a person who might be held hostage for ransom by the group. All 34 participants were provided with this information and told they should never reveal it. In the experiential phase of survival training, the participants were pursued and eventually captured by 'enemy forces' and confined in a mock prisoner of war camp. Here, each experienced four days of various psychological stressors, including food and sleep deprivation that previous research has shown results in robust increases in stress indicators (cortisol, catecholamines, heart rate, reductions in testosterone, and subjective stress [*57-59*]).

  During this four-day period, the participants were interrogated for about 30 minutes. While alone in a room with an interrogator, all 73 participants were presented with a Fixed Choice Test that had been constructed by the on-site Special Forces instructors. A set of instructions was provided first, meant to motivate the soldier to participate ("We know that there is a group of terrorists who are working secretly in our country...We believe you know something about this. I am going to show you some pictures and I want you to tell me what you know about this group. I think it is possible that you do NOT know anything. . . So just guess. . . It will make my boss very happy and he will be much nicer to you and the other Americans who are here if you just give me an

[xi] The first card from each set of 12 for faces, cars and restaurants were analyzed separately, and deviations from chance distributions were significant for each category.

answer" [*55, p. 5*]).[xii] Rather than give each soldier multiple choices, the strategy here was to offer each soldier one sheet per category of secret item and then use the group data to identify the concealed information: the instructor placed seven single sheets of paper on which were three 3 X 3 inch color photographs of three different items, corresponding to the questions asked by the interrogator and related to information provided during the secret briefing (location, target, size of group, gun, improvised explosive devises, timing, and hostage). Each sheet of paper contained a photograph of one of the items described in the briefing and two other items that were similar in content but not part of the briefing.[xiii] Thus, on each sheet, two of the three items were unknown to all 73 subjects whereas one of the three was known to the 34 that had received the secret briefing. The instructors were ignorant of which items were correct and which were fillers.

Fifteen of the 73 initially refused to take the test; when reminded that it would make the commander happy and thus be good for the whole group, they agreed and then adopted a strategy of always picking the picture on the left, middle or right – of these 15, 14 were from the group who had been given the secret briefing.[xiv] Analyses of the choices of the remaining 58 soldiers[xv] showed that they avoided the correct items in a statistically improbable manner, thus (collectively) identifying the secret information. The only item not thus identified was the weapon. Such results demonstrated that while analysis of a single subject's behavior in and of itself may not reveal concealed information, analysis of information held at the group level as a whole may effectively reveal such information. It should be noted here that although the instructors were ignorant of which soldier had received the secret briefing, the research team was not, which was necessary to test the accuracy of the method.[xvi]

[xii] One of the challenges to using a Fixed Choice Test in real life situations is that the subject must agree to the test. Although refusing to take the test might indicate concealed knowledge, it might also reflect anxiety, distrust or confusion about the test. The instructor must thus create a scenario that motivates the subject to take the test, such as "my boss will be happy, which will be good for you."

[xiii] It is necessary that the comparison items be sufficiently similar to the critical items that if someone had no information about the group or plans in question, they would be equally likely to choose among the three.

[xiv] It is theoretically possible for an individual to choose randomly, but generating random choices has been shown to be quite difficult [*60*].

[xv] Data analysis was conducted by the research team. However, the soldiers could have been provided with binomial or multinomial distributions and instructions on how to interpret the outcomes at a level sufficient to identify the concealed information.

[xvi] The Concealed Information Test (see Chapter 4) has been similarly used for instances where a guilty suspect is already identified and a list of possible crime-related items are presented; the suspects' responses result in new (presumed) facts about the crime [*61,62*].

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NOTE: An asterisk (*) denotes peer-reviewed schlolarly publications resulting from HIG-funded research.

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Chapter 3: Interviewing Methods

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Chapter 4: Detecting Truth and Deception

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Notes

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APPENDIX A: SUMMARY OF PEER REVIEW PER OMB M-05-03

This report was peer-reviewed in accordance with the Office of Management and Budget's "Final Information Quality Bulletin for Peer Review" (M-05-03) guidance, issued December 16, 2004. This Bulletin establishes that important scientific information "shall be peer reviewed by qualified specialists before it is disseminated by the federal government" (p.2). Under this Bulletin, agencies are granted broad discretion regarding which peer review mechanism to use. The general requirements are that the peer review process is made transparent by making available to the public the written charge to the peer reviewers and the peer reviewers' names and affiliations. Reviewers of this report were asked to review the report with the charge below, and told that their names, affiliations, and reviews would be summarized (without attribution) and included in the final report.

Charge to the reviewers:

1. The report is intended as a brief review of the scientific literature relevant to interviews and interrogations in intelligence contexts – that is, where the primary objective is information gain. It is not meant to be a manual or necessarily useful to practitioners. Does this report meet that intent?
2. Are there areas of research that should have been included and were not?
3. Are scientific uncertainties clearly identified and characterized? Is additional research likely to decrease key uncertainties?

The reviewers were as follows. None of these individuals has had a contractual relationship with the HIG with the exception of Professor Redlich (two-year contract issued in FY2010):

- Professor Emeritus R. Edward Geiselman, Ph.D., University of California Los Angeles, CA (U.S.)
- Professor Lorraine Hope, Ph.D., Department of Psychology, University of Portsmouth, Portsmouth (U.K.)
- Professor Mark Kebbell, Ph.D., School of Applied Psychology and Chief Investigator, Australian Centre of Excellence in Policing and Security, Griffith University, Brisbane (AU)
- Paul Lehner, Ph.D., Chief, Test and Evaluation, Intelligence Advanced Research Projects Activity, Washington DC (U.S.)
- Deborah Loftis, Ph.D., Research Program Manager, NCSC, Office of the Director of National Intelligence, Washington DC (U.S.)
- Daniel J. Neller, Psy.D., ABPP (Forensic), Independent Practice, Southern Pines NC (U.S.)
- Professor Allison Redlich, Ph.D., Department of Criminology, Law and Society, George Mason University, Fairfax VA (U.S.)
- Professor Brent Snook, Ph.D., Department of Psychology, Memorial University, Newfoundland (CA)

Summary of reviewer remarks with regards to the three charges:

1. The report is intended as a brief review of the scientific literature relevant to interviews and interrogations in intelligence contexts – that is, where the primary objective is information gain. It is not meant to be a manual or necessarily useful to practitioners. Does this report meet that intent?

   Responses: Seven of the eight reviewers stated that the report provided a sufficient and broad overview of the scientific literature relevant to interviews and interrogations in intelligence contexts. One reviewer did not address this charge. Comments included:

"This report covers a great deal of material. . . The authors are to be congratulated for the diversity of material they cover and the report provides a great starting point for people wanting to know about the area."

"The HIG 2016 report…is a well-considered and methodological review of the scientific literature relevant to interrogation practices and draws from that literature to propose a collection of science-based best practices."

". . .the work contains major chapters on empirically-supported strategies and tactics that will enable interviewers to more effectively assess and gain cooperation, detect deception, and gather useful information from sources across multiple contexts."

"HIG staff has adeptly and comprehensively evaluated the empirical literature related to the efficacy of interrogation approaches and techniques and surrounding responsibilities used in practice, developed via the scientific method, and recommended in Chapter 8 of the Army Field Manual 2-22.3."

"This document is fine if the goal is to simply review studies (some of which are indirectly and directly related to interrogations). However, the title of the document suggested that the audience was about to read a documents [sic] that was very discerning regarding what constitutes scientific findings that are reasonably well known, versus those that are emerging or based on common-sense notions of what works."

Two reviewers provided references to additional work. To the extent possible, the report was modified to include these references.

2. Are there areas of research that should have been included and were not?

   Responses: Areas of research that might have been described in greater detail were (i) those interview and interrogation methods that lack empirical support, (ii) false memories phenomena, (iii) the impact of question structure and function on information yield, (iv) impacts of teams on interrogation outcomes; (v) research on how interrogators make sense of the information they collect before and after an interrogation, and (vi) research on information elicitation techniques suitable for use with traumatized and/or vulnerable individuals. One reviewer pointed out that two meta-analyses of the Cognitive Interview showed a small increase in the number of incorrect details reported (relative to control conditions), although this effect was consistently and significantly smaller than the effect of the Cognitive Interview to increase the number of correct details. The text of this report was modified to reflect these data.

3. Are scientific uncertainties clearly identified and characterized? Is additional research likely to decrease key uncertainties?

   Responses: Two reviewers felt strongly that key uncertainties were not adequately identified, especially with respect to the use of priming to facilitate information collection, pointing to relatively small effect sizes and challenges to reproducibility in published scientific reports.

   The reviewers agreed, however, that further research would decrease these uncertainties:

   " I was not convinced that the supported practices are actually supported by a robust body of scientific findings…For instance, I am not aware of a true experiment that has shown that planning an interview leads to a more effective interview…referencing correlational

studies (and surveys) is okay, but the limits of these methodologies need to be highlighted."

"I think there is some attempt to acknowledge uncertainties but I do think some of the studies risk being over-generalised from laboratory studies to much broader application….I am not saying these findings will not work in the field but it would be worthwhile finding out. There is a great deal of speculation here that I think should be acknowledged. I liked the 'interrogation best practices' section, I agree with almost all of the practices suggested. However, there wasn't a scientific backing for all of them included in the report…I suggest you might wish to start with some of the mentioned 'interrogation best practices' (page 1) and put them to the test with…Randomized Control Trials. It may be time-consuming but it would probably give more information than lots of ambiguous, small-scale, laboratory studies."

"Just because a study passed the peer-review 'test' does not make it a robust finding that can be acted upon. In sum, some basic science education for the audience at the outset of this document might benefit readers."

Seven reviewers agreed that uncertainties were clearly identified and characterized, and that additional research would likely decrease these uncertainties:

" To the first question, there is no one scientific studies [sic], or even a body of studies, that can answer questions definitively. HIG staff has done a tremendous job of identifying and describing what findings are more and less reliable…To the second question, as an academic researcher, I am of the firm opinion that additional research is always needed."

"With regards to additional work, I think the key is to see if any of this works in practice."

"Researchers will use this single resource to identify relevant studies that have already been conducted, as well as studies that still need to be conducted to advance our scientific understanding of this important topic."

"In my view this reports [sic] makes a sufficiently strong case that current practices, such as those found in the AFM, should be replaced with more science-based practices such as those identified at the beginning of this report. Additional research is always helpful, but it seems that at this point the most productive direction would be to implement and instrument new interrogation practices – embed scientific data collection as part of new practices and protocols for interrogation. This would pave the way for meaningful continuous improvement."

Authors' note: The HIG recognizes the real need for field validation. Field validation research has been a high priority of the HIG research program since 2014; three field validation studies have been conducted to date (see p. 46) and three are scheduled for 2017. Significant challenges to field validation include (i) the lack of video recording of intelligence interrogations, (ii) training highly experienced professionals on new methods in such a manner as to have them use the new methods rather than the old methods, and (iii) finding robust measures that adequately reflect the dynamics of interrogations processes and outcomes that are not context-specific.

The HIG would like to acknowledge additional reviewers that read all or parts of an earlier, longer version of this report. They were asked to review these sections for accuracy. These individuals had contracted with or currently are on contract with the HIG:

- Dr. Drew Leins, Applied Research Associates, Washington DC (U.S.)
- COL (ret). Steven M. Kleinman, Operational Sciences International, Monterrey CA (U.S.)
- Professor Christian A. Meissner, Ph.D., Department of Psychology, Iowa State University, IA (U.S.)
- Professor Paul Taylor, Ph.D., Department of Psychology, Lancaster University, Lancaster (U.K.)
- Professor Aldert Vrij, Ph.D., Department of Psychology, Portsmouth University, Portsmouth (U.K.)