6-30-2020

A Novel Approach to Studying Human Intelligence-Gathering: Employing a Realistic Paradigm for the Study of Elicitation Approaches

Sarah A. Shaffer

Florida International University, sshaf013@fiu.edu

Follow this and additional works at: <https://digitalcommons.fiu.edu/etd>

Part of the [Applied Behavior Analysis Commons](#), [Cognitive Psychology Commons](#), [Experimental Analysis of Behavior Commons](#), [Other Psychology Commons](#), and the [Social Psychology Commons](#)

Recommended Citation

Shaffer, Sarah A., "A Novel Approach to Studying Human Intelligence-Gathering: Employing a Realistic Paradigm for the Study of Elicitation Approaches" (2020). *FIU Electronic Theses and Dissertations*. 4482.
<https://digitalcommons.fiu.edu/etd/4482>

This work is brought to you for free and open access by the University Graduate School at FIU Digital Commons. It has been accepted for inclusion in FIU Electronic Theses and Dissertations by an authorized administrator of FIU Digital Commons. For more information, please contact dcc@fiu.edu.

FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

A NOVEL APPROACH TO STUDYING HUMAN INTELLIGENCE-GATHERING:
EMPLOYING A REALISTIC PARADIGM FOR THE STUDY OF ELICITATION
APPROACHES

A dissertation submitted in partial fulfillment of

the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

PSYCHOLOGY

by

Sarah A. Shaffer

2020

To: Dean Michael R. Heithaus
College of Arts, Sciences and Education

This dissertation, written by Sarah A. Shaffer, and entitled, A Novel Approach to Studying Human Intelligence-Gathering: Employing a Realistic Paradigm for the Study of Elicitation Approaches, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

Eric Carpenter

Stefany Coxe

Ronald Fisher

Jacqueline Evans, Major Professor

Date of Defense: June 30, 2020

The dissertation of Sarah A. Shaffer is approved.

Dean Michael R. Heithaus
College of Arts, Sciences and Education

Andrés G. Gil
Vice President for Research and Economic Development
and Dean of the University Graduate School

Florida International University, 2020

© Copyright 2020 by Sarah A. Shaffer

All rights reserved.

DEDICATION

To my family, who have always supported me and done their utmost to provide the opportunities to help me succeed. For my dad, who has taught me so much and who instilled in me an affinity for nature. For my mom, for always being there to talk when nature won't suffice (even if that happens to be very, very, late at night). To my sister (HD), for being the fantastic person that she is, and for always providing the distraction of laughter or idle conversation, whichever the situation calls for. And for Hiro, who has patiently put in too many hours to count, listening to me complain regarding the inherent evils of writing, and who has always been there to step in with a Suzy Q when I needed it.

ACKNOWLEDGMENTS

I wish, first and foremost, to thank all the Research Assistants who helped me collect sometimes absurd amounts of data in record time. There are too many of you to name, but you know who you are. I also wish to thank Dr. Jacqueline Evans, for all of the amazing advice and for the independence she's allowed me over the years. I would also like to thank Dr. Schreiber Compo for her abundance of insight and my committee members, Drs. Eric Carpenter, Stefany Coxe, and Ron Fisher for their guidance as well as patience. A final thank you, to all my extended family and friends for their continual support and encouragement. Finally, I wish to acknowledge the SEED funding I received from the College of Arts, Sciences, and Education, without it this dissertation would most assuredly not have happened.

ABSTRACT OF THE DISSERTATION

A NOVEL APPROACH TO STUDYING HUMAN INTELLIGENCE-GATHERING:
EMPLOYING A REALISTIC PARADIGM FOR THE STUDY OF ELICITATION
APPROACHES

by

Sarah A. Shaffer

Florida International University, 2020

Miami, Florida

Professor Jacqueline Evans, Major Professor

It is often necessary to interrogate sources of information when threats to national security (e.g., impending terror attack) are present. However, the overwhelming majority of research focuses on the interrogation of criminal suspects despite the arguably greater consequences of the former context, known as Human Intelligence (HUMINT) collection. The present study is the first to examine a highly successful approach to collecting information from sources of human intelligence (HUMINT)- the Scharff Technique.- within a novel and highly realistic paradigm. Participants were recruited for a study on group interaction. Every group contained a study confederate posing as a participant who gave a series of scripted details indicating they had plans to attend an ‘event.’ During a group discussion the experimenter told participants that a threat was written on one of the study forms and that each participant would need to speak to a supervisor from the research team to find out which participant had made the threat (the confederate’s scripted lines implicated him/her as the target individual). Participants were interrogated using one of two interrogation approaches recommended by the U.S.

government (Direct Approach; File and Dossier Approach)(Army Field Manual, 2-22.3) or a similar technique used in previous research (the Scharff Technique). Participants interrogated using the Scharff Technique viewed the interrogator as significantly more knowledgeable and sources in this condition contributed more new information over the course of the interview. However, participants in the Scharff Technique condition reported less difficulty in determining interrogator information objectives. Participants across conditions were inaccurate in their estimates of their own information contributions, tending to overestimate the number of details they had given, regardless of Interrogation Approach. Results of the current study indicate that the success of an interrogation approach in given situation is likely goal-dependent. The Scharff technique may be effective in contexts where the appearance of high interrogator knowledgeability is of central importance but may be unnecessarily time-consuming when it is not.

Keywords: Intelligence-gathering; Interrogation; HUMINT; Army Field Manual

TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION	1
II. LITERATURE REVIEW	3
HUMINT vs Criminal Interrogation	3
Counter-Interrogation Strategies (CISs)	6
Elicitation	8
Perspective-taking	10
The Scharff Technique	13
Schematic Frameworks and Imagining Terrorism	22
Mirroring Real-World Conditions in the Study of Interrogation	24
Interrogation Paradigms	26
Psychological Realism	30
Group size	32
Isolation and separation	33
Objectives of the Current Study	36
Hypotheses	38
III. METHOD	39
Design	39
Participants	40
Materials and Procedure	41
Phase 1	41
Phase 2	42
Post-Interrogation Measures	47
Post-Interrogation Checklists	47
Interrogations	48
Direct Approach	48
File and Dossier Approach	49
Scharff Technique Approach	50
Inter-rater Reliability	51
New details	51
IV. RESULTS	52
Preliminary Analyses: Group and Participant-Specific Outcomes	52
Elicitation Outcomes	54
Difficulty Determining Information Objectives.	54
Interrogator knowledge	54
Total details	55
Event-relevant details	55

Subjective Information Contribution.	56
Total details	56
Event-relevant details	56
Source Disclosures	56
Objective information contribution	57
Total details	57
Event-relevant details.....	57
Subjective vs Objective Information Contribution	58
Total details.....	58
Event-relevant details.....	59
New Details.....	59
Total number of new details	60
New event-relevant details.....	60
Deception	61
V. DISCUSSION	61
Limitations of the Current Study	68
Debriefing	71
Conclusion	73
LIST OF REFERENCES	75
TABLES	82
APPENDICES	89
VITA	135

I. INTRODUCTION

In early March of 2004, several bombs were simultaneously detonated along Madrid's commuter rail system (Kassin, Dror, & Kuckuka, 2013). The bombings- which caused the deaths of nearly 200 individuals and injured thousands- were the deadliest in Spanish history, and the deadliest terror attack in decades through the whole of Europe. Madrid's police force requested the aid of the Federal Bureau of Investigation, who identified Oregonian attorney and military veteran, Brandon Mayfield, as a suspect (United States Department of Justice, Office of the Inspector General, 2006). Mayfield was identified and charged with the crime because of his known travel patterns, recent conversion to Islam, and a partial fingerprint match obtained from a bag containing detonation devices. However, the terrorist organization Al Qaeda soon claimed responsibility. Within weeks of the original attacks additional bombings occurred, including a suicide bombing perpetrated by four suspects found to have links to Islamic extremist and Moroccan drug-trafficking groups. Mayfield's wrongful arrest resulted in an official apology from the United States government and a settlement of millions. As a result of the case, the field of forensic identification came under fire, leading to the discovery of many other cases of wrongful conviction resulting from factors related to invalid forensic science. However, it has become apparent that forensic science is low on the list of factors contributing to wrongful conviction, which is vastly overshadowed by the counterintuitive finding that innocent individuals can be led to confess to committing crimes they took no part in, during the interrogation process.

In light of the phenomena of false confessions by innocent individuals to criminal wrongdoing (e.g., Drizin & Leo, 2004), psychological study of criminal interrogations and confessions has burgeoned in the last several decades. As is poignantly illustrated in the case of the Madrid bombings and other terror events (e.g., September 11th attacks), the downstream social and economic consequences of mass crime can be severe. However, criminal investigation is only one context in which interrogation and information-gathering occur. Individuals involved in extremist groups, organized crime, or with knowledge regarding events that threaten national security may also undergo interrogation. In the event of a potential terror attack, valuable information (i.e., ‘intelligence’) must be gathered from human sources (Human Intelligence; HUMINT). One could argue that the careful, systematic collection of information from known members of the groups connected to the Madrid attacks- who had existed for some time prior- could have prevented both the wrongful arrest of Mayfield, the expenditure of millions of taxpayer dollars and, potentially, the loss of life due to the bombings themselves. Such military and national security interrogative contexts differ from criminal interrogations both in the subject and the goal of the questioning. As a consequence of an increased and nearly singular focus on criminal interrogation, HUMINT interrogation has received little attention in the laboratory. The current study therefore aims, generally, to provide an additional method for the study of HUMINT interrogations as well as providing one of the first empirical examinations of the techniques mandated by the United States (US) government for questioning human sources of information in military and security contexts. First, an overview addressing the differences between HUMINT and criminal interrogation and a discussion of issues

uniquely pertinent to the laboratory study of HUMINT will be provided. The following sections will then highlight several approaches used to question sources in intelligence-gathering (i.e., HUMINT) contexts as well as the corresponding body of literature examining their efficacy. Finally, the variables of interest in the current study will be discussed.

II. LITERATURE REVIEW

HUMINT vs. Criminal Interrogation

The difference between HUMINT and criminal interrogative contexts is most readily apparent in terms of outcome metrics. Criminal interrogators typically question individuals suspected of crimes in an effort to obtain an admission of guilt. In contrast, HUMINT collectors typically seek usable, or actionable, information regarding an event of interest, often a planned rather than past event (Evans et al., 2010; Kassin et al., 2010). In a criminal investigation, confessions are viewed as a gold standard in evidence acquisition (Drizin & Leo, 2004). If the suspect confesses, investigators may view further investigation and evidence collection as pointless because an admission of guilt alone is often more than adequate to obtain a conviction. However, confession evidence may not always lead to conviction and, in some cases, innocent individuals have confessed to crimes they did not actually commit. The failure to convict a guilty individual, and conversely the conviction of an innocent individual, necessarily results in the fruitless expenditure of scarce resources in the legal system. Further, it serves to undermine the justice-seeking function of the courts in addition to leaving vast potential for the commission of additional crimes by the true perpetrator. Conversely, a focus on increasing the amount of case-specific information obtained during interrogation may

generate investigative leads and aid in evidence collection and substantiation thus increasing the likelihood that true perpetrators are convicted and appropriately sentenced. In short, the study of HUMINT interrogation with its focus on obtaining accurate information has the potential to advance both intelligence and criminal interrogations.

A related difference between HUMINT and criminal interrogations is the target of the interrogation. Criminal interrogations dictate a singular focus on the suspected perpetrators of crime (i.e., the guilty). However, a source of information in a HUMINT interrogation need only possess information about an event or group of interest (i.e., guilty knowledge). Sources, as opposed to suspects, may therefore be directly involved in an event of interest and possess critical information of its planning, or may be only indirectly or tangentially involved. For example, a source of information such as an acquaintance of a high-value target may be able to provide information on the movements and activities of that target but not on the critical event (Borum, Gelles, & Kleinman, 2009; Evans et al., 2010; Granhag, Oleszkiewicz, Strömwall, & Kleinman, 2015). Sources, generally speaking, are likely to vary greatly in terms of both their level of cooperativeness and in the amount of information they hold (Granhag, Oleszkiewicz, Strömwall, & Kleinman, 2014; Shaffer, Matuku, & Evans, in preparation).

If sources cannot be considered similar to criminal suspects, one may ask why the various methodologies used to study how to gather information from eyewitnesses do not extend to sources of information in intelligence-gathering efforts. Experimental manipulations of eyewitness conditions aim to examine their effects on eyewitness memory, such as how accuracy is affected by feedback from co-witnesses or lineup administrators. However, sources of information differ in several notable ways from

criminal witnesses. Namely, sources of information may not know that they possess valuable information to begin with. For example, and as previously mentioned, a source may not directly hold information on an event or individual and may instead hold value to interrogators on the basis of informational relevance to the network or movements of target individuals. In addition, sources likely hold similar ideologies, cultural identity, or religious values in common with the high-value target or group about whom they are giving information about and may therefore have more incentive to be uncooperative whereas witnesses may have little to no connection to the criminal suspects they are asked to identify (Shaffer, Matuku, & Evans, in preparation), making sources of information more akin to suspects than to witnesses. Finally, sources of information in intelligence collection contexts are much more likely to experience cultural mismatch with interrogators and often require the intervention of interpreters or interrogation by individuals who are not native to either their language or culture (Russano, Narchet, & Kleinman, 2014; Shaffer & Evans, 2018; Evans, Shaffer, & Walsh, 2019). Nonetheless, prevention of intended events such as terror attacks resulting in large-scale loss of life may not be possible without the information collected from human sources. Thus, it is critical in HUMINT contexts to explore means of increasing the likelihood that information obtained is plentiful and accurate.

As with criminal suspects, uncooperative sources may choose to engage in deception as a form of resistance. Previous research on deception regarding intentions for the future has found that differences between true and false statements on intentions are difficult to distinguish because of similarity in the number of details provided (Granhag & Knieps, 2011). Thus, rather than examining number and type of details, as is useful

when attempting to detect deception regarding past events (Granhag, Vrij, & Verschuere, 2015; Hartwig & Bond, 2014), there is some evidence suggesting that plausibility can help to distinguish between true and false statements regarding intentions (Vrij, Granhag, Mann, & Leal, 2011; Vrij, Leal, Mann, & Granhag, 2011). However, in real HUMINT settings it may not be possible to determine the plausibility of statements at the initial phase of contact or if the interrogator holds little evidence of involvement to begin with. As such, it may be more efficacious in a HUMINT context to use interrogation approaches aimed at preventing of deception in the first place. Critically, in addition to being deceptive sources may also use several other strategies to resist interrogative tactics and manage or withhold the information they possess. Strategies used by sources to resist interrogation have been studied to a much lesser degree than deception regarding intended events. The next two sections will highlight the importance of examining the information management and interrogative resistance strategies used by sources in HUMINT interrogations and review relevant research aimed at curbing the use of resistance strategies.

Counter-Interrogation Strategies

Sources with critical knowledge (i.e., knowledge regarding an individual, group, or event of intelligence value) may be aware that they hold valuable information and know that they will need to decide which details to share and which to withhold when questioned (Clemens, Granhag, & Strömwall, 2013), a process known as information management (Granhag, Mac Giolla, Strömwall, & Rangmar, 2013). Self-regulation theory broadly posits that individuals adopt a variety of strategies in order to reach their goals in social interactions (Fiske & Taylor, 1991; Granhag & Hartwig, 2008). In

addition to simply deciding what to withhold and what to give up, sources in HUMINT interrogations may differ in the goals or motives that drive their information-management strategies. First, sources that possess important knowledge may simply seek to keep their knowledge from interrogators altogether and adopt means to resist all questioning entirely (e.g., maintaining silence, responses of “no comment”)(Granahag, Kleinman, & Oleszkiewicz, 2016). Second, a source, may want to withhold information while needing to appear cooperative to their interrogator (e.g., fear of retribution/punishment from extremists, immunity from prosecution)(Alison et al., 2014; Granahag, Oleszkiewicz, Strömwall, & Kleinman, 2015). Sources in HUMINT interrogations may use various techniques to resist interrogation depending upon their information-management goals. However, as there has not, as of yet, been a means proposed to combat those true withholders who choose to refrain from giving information entirely, the current study will focus on the latter, semi-cooperative group.

Alison et al. (2014) examined the use of Counter-Interrogation Strategies in a sample of 181 interrogations with detained Irish Republican Army (IRA), Al-Qaeda, and right-wing terrorists. The authors identified five general categories of strategies used among detainees including verbal (e.g., discussion of unrelated topics or of information already known to the interrogator), passive verbal (monosyllabic responses), passive (e.g., gaze aversion, silence), retractions, and responses of “no comment.” They also found that the use of Counter-Interrogation Strategies differed by group membership such that Al-Qaeda detainees made more retractions while IRA members more commonly resorted to topic changes or discussion of information already known to the interrogator. The use of strategies such as retraction and topic change may make the source appear to

be cooperative simply by virtue of their mere responsiveness, while they are nonetheless accomplishing their goal of withholding information. In other words, while sources could engage in blanket withholding or deception many may instead actively adopt strategies meant to manipulate interrogator perceptions of their cooperativeness while refraining from giving useful or novel information.

Elicitation

One way to prevent the use of Counter-interrogation Strategies in HUMINT interrogation may be to employ methods of elicitation. Elicitation refers to interrogative approaches that aim to extract sought after information without the knowledge of the source or by obscuring interrogator information objectives (Granahag, Montecinos, & Oleszkiewicz, 2015). Elicitation approaches aim to obtain information while a) preventing the source from guessing what information is known and unknown by the interrogator and b) manipulating the perception of the source in such a way that he is unaware of the fact that he has actually given new information to the interrogator. If an interrogator can indeed keep a source blind to the information being sought and the information the interrogator already holds, the source's ability to effectively employ Counter-Interrogation Strategies can be reduced or removed entirely. The concurrent aims of elicitation in obscuring interrogator information objectives and disallowing sources to accurately determine their own information contribution during interrogation will collectively be referred to as "elicitation outcomes" henceforth.

The United States Department of the Army's official manual on interrogation (Army Field Manual, 2-22.3, 2006) dictates the legal methods of interrogation, and outlines nineteen approaches for obtaining information from sources of intelligence. The

most commonly used approach is a combination of direct (i.e., cued) and open-ended questions (Redlich, Kelly, & Miller, 2014). The Army Field Manual recommends that these “Direct” interrogations be used before any other interrogation approach is considered and further states that Direct interrogations are successful with 90% of sources (despite a lack of empirical testing or evidence-base). However, a Direct Approach is not ideal from an elicitation standpoint, as the use of direct/cued questions may imply to the source that the interrogator holds very little information, which in turn may lead to increased use of Counter-Interrogation Strategies aimed at misleading the interrogator.

The Army Field Manual also outlines several futility-based approaches meant to reinforce the idea that the withholding of information by sources is pointless. Approaches such as "We Know All" and “File and Dossier” attempt to manipulate the perspective of sources in such a way that they are led to believe that the interrogator already possesses all possible information. The File and Dossier approach, a version of “We Know All,” for example, requires that interrogators prepare an extensive file on the source containing documents on personal history, employment, and other information. The file may then be padded with blank sheets of paper and labeled by section in order to create an illusion of "knowing-it-all.” The apparently extensive dossier and verbal utterances from the interrogator, are meant to imply to the source that the questioning is a matter of course rather than one of necessity. The interrogator then asks questions to which the answer is already known in order to assess the level of cooperativeness and truthfulness of the source and to create the illusion of knowing-it-all. However, the techniques outlined in the Army Field Manual are based on practitioner experience (i.e., customary knowledge)

and anecdotal evidence rather than empirical testing (Borum, Gelles, & Kleinman, 2009) and few studies have examined the effectiveness of interrogative approaches meant to prevent the use of Counter-Interrogation Strategies. Many of these studies have focused on tactics that use perspective-taking as a means of predicting what sources expect from interrogation and using this perspective by employing tactics that will prevent sources from using Counter-Interrogation Strategies (Granhag, Oleskiewicz, Sakrisvold, & Kleinman, 2019; Luke & Granhag, 2020).

Perspective-taking and conversation

Successful communication (including in interrogative settings) relies on the ability of speakers to assess the knowledge-base and ease of understanding of listeners and to then tailor utterances to achieve the goal of the communication (Krauss & Fussell, 1991). The ability to assess and understand the perceptions of others is defined as perspective-taking. For example, an interrogator must assess the knowledge-base and motivations (e.g., immunity from prosecution) of a source and subsequently tailor his interrogative approach to that knowledge-base and motivation to accomplish his goal of obtaining information. The interrogator therefore must necessarily attempt to adopt the perspective of the source to determine potential drivers of desired behavior in interrogative exchanges in order to maximize the potential for information-gain.

Previous communication research (e.g., Roxβnagel, 2000) has found that perspective-taking ability and resultant utterances are greatly affected by cognitive processing capacity and load. When cognitive load is high, speakers tend to use less description and more technical language than they would when cognitive load is low. One communication model identifies three objectives that serve as decision-making

standards for verbal exchanges in an approach known as the Principal of Adequacy Drop. The Principal of Adequacy Drop posits that speakers adapt communication style and language toward these three orientations. Specifically, speakers have i) a goal they wish to achieve with the communication (goal achievement orientation; most important) ii) the desire to communicate in a way that will secure the cooperation of the listener (cooperation orientation), and iii) the necessity to adapt grammar, syntax and word-choice to the perceived competency level of the listener in order to maximize the potential of the listener to understand the communication (grammar orientation; least important)(Klein & Zeische, 1996). When cognitive load is low, all orientations are equally considered in conversational planning. However, when cognitive load is high (e.g., time pressure, stress), orientations are dropped in reverse-order of importance, leaving goal achievement as the sole focus for verbal planning. Alternatively, listeners who have little need to provide return utterances may find themselves with low cognitive load because the necessity for response formulation is reduced when speakers are providing the majority of the utterances in semi-monologue form. However, in interrogative situations cognitive load for sources may be increased as the source assesses interrogator utterances to determine level of knowledge and to manage information and Counter-Interrogation Strategies. In laboratory tests, perspective-taking ability has been found to increase successful negotiation (Galinsky, Maddux, Gilin, & White, 2008). In real-world interrogative contexts the effect of increases/decreases in perspective-taking ability can be seen, for example, in the fact that diminished capacity for perspective-taking may lead juveniles to falsely confess more frequently (Redlich, Silverman, Chen, & Steiner, 2004) whereas police officers who score highly in perspective taking are more

likely to engage in active listening techniques even without formal training (Wachi, Watanabe, Yokota, Otsuka, & Lamb, 2016). Furthermore, simulation of another's experience, whether through conversation, observation, or visualization, has been found to provide greater accuracy in prediction of action than inference alone (Zhou, Majka, & Epley, 2017).

Relatedly, Grice (1975) proposed four maxims which contribute to cooperative conversation. First, speakers must relay an appropriate amount of information without over-informing (i.e., 'Quantity'). Second, speakers must give information that is both truthful and supported by evidence (i.e., 'Quality'), and also relevant to the conversation (i.e., 'Relation'). Lastly, speakers must be concise rather than using vague language (i.e., 'Manner'). Grice proposed that these maxims are necessary for successful conversation because a conversation cannot be sustained without cooperation. Grice further posits that adherence to cooperative principles conveys greater understanding of the expected norms of the context in which the conversation takes place. However, adherence to conversational norms can be affected by a variety of factors. For example, Koch, Forgas, & Matovic (2013) induced negative or positive affect in order to observe consequent adherence to Grice's maxims. The author's found that participants experiencing negative affect displayed greater adherence to conversational norms than participants experiencing positive affect.

Given the effect of perspective-taking and conversational norms in both laboratory and policing contexts, it is reasonable to conclude that interrogative approaches using perspective-taking may be more effective than those that do not. The previously described futility approaches, for example, may facilitate obfuscation of

interrogator knowledge by forcing the source to work harder to determine what the interviewer does and does not know in addition to attempting to determine what information the interrogator is seeking from the source (thereby also violating the cooperative maxim of Quantity). Increased cognitive demand may use up limited-capacity cognitive systems more quickly (e.g., attention, working memory), therefore leading to a decrease in the source's ability to engage in Counter-Interrogation Strategies successfully. Despite the relevance of perspective taking to the study of interrogation, little empirical study has been directed toward systematic testing of the efficacy of military interrogation approaches.

The Scharff Technique

Although it is not included in the Army Field Manual, one empirically tested interrogative approach that has been found successful in elicitation is the Scharff Technique. Hanns Scharff was a German Luftwaffe pilot in World War II who was tasked with interrogating American and British Prisoners of War (POW). Scharff, an untrained interrogator, was lauded for his ability to elicit invaluable intelligence (Oleszkiewicz et al., 2015) and gained renown for his success, both among his superiors and internationally, as evidenced by the training lectures requested of him by the US military after the war (Granahag, Kleinman, & Oleszkiewicz, 2016). Scharff believed that attempting to understand the point of view of his sources was vital in eliciting crucial information from them and thus made use of perspective-taking in his approach by observing the interrogations conducted by his colleagues (Toliver, 1997). Observation of interrogations allowed Scharff to develop an approach that entailed the opposite of what

POWs had come to expect from other interrogators (Granhag, Kleinman, & Oleszkiewicz, 2016).

Scharff hypothesized that a source would adopt one of three Counter-Interrogation Strategies a) give very little information overall b) guess what the interrogator does not know and withhold that information specifically and c) give the interrogator information he already has and is therefore not useful. He reasoned a successful interrogator must adopt an approach that prevents sources from using these strategies. Scharff developed an interrogative approach consisting of five general elements: use of a friendly and conversational tone; avoid asking questions; build and maintain an illusion of “knowing-it-all”; provide opportunities to confirm/disconfirm uncertain information; and ignore new information. These elements are explained in more detail below. Note, the Scharff Technique is intended for semi-cooperative sources; sources who are unwilling to speak with the interrogator are not candidates for the Scharff Technique.

Military operators receive resistance training in the event that they are captured and subjected to coercive and torturous interrogations. In contrast to the expectations about interrogation such training generates, Scharff’s approach was quite friendly (e.g., taking a source out of the interrogation context, perhaps to the officer’s bar). Scharff rightly assumed that positive, respectful and humane treatment where sources were treated as equals would be more effective. The friendly approach serves to bolster rapport and convey that the interaction is a conversation rather than an interrogation and may have the added benefit of decreasing the anxiety of the source. In an analysis of 488 police interrogations with suspected terrorists, Alison et al. (2013) found that adaptive

rapport-based approaches directly led to increased positive interpersonal behavior (e.g., active listening, mirroring) from suspects and, critically, greater information yield. However, even minimal use of maladaptive interpersonal behavior on the part of the interrogator (e.g., confrontation) resulted in greater use of maladaptive interpersonal behavior by suspects and directly led to reductions in information yield. Research by Alison et al. (2013), among others, seems to suggest that rapport-based, or at least friendly, approaches are ideal in the interviewing and interrogation of sources.

The second tenet of Scharff's approach is to refrain from asking questions. Using statements rather than questions may bolster the first tactic (i.e., use of a conversational tone) by conveying the conversational tone and also builds the source's sense of autonomy by removing any pressure for information. In addition, Scharff believed that asking questions would reveal to the source that information was being sought, making the encounter an interrogation rather than a conversation. By refraining from asking questions, the source may feel (incorrectly) that the interrogator is not seeking information at all. If the source is expecting to be asked for information, presumably information not held by the interrogator, then the anticipation of questions may distract the source from attempting to discover what the interrogator knows, thus decreasing his ability to withhold and deceive. Furthermore, the use of questions may allow the source to perceive gaps in the knowledge of the interrogator thus allowing him the opportunity to misdirect or deceive.

The third element of the Scharff Technique is the building of an illusion of "knowing-it-all" so that the source perceives that withholding information is futile. Scharff did this by both extensively studying the personal history of his sources and by

providing a summary of known information at the outset of the interrogation. Collection of available personal information is now common to the process for many modern military and national security interrogations. In modern HUMINT collection efforts, an extensive screening process takes place prior to interrogation in order to determine whether the source is likely to hold information of intelligence value. This is accomplished through collection of both public records (e.g., geographical location, technical skills, criminal history) and personal items (e.g. journals) in an attempt to uncover Biographic Intelligence (Army Field Manual, 2-22.3; Brandon & Wells, 2019). Biographic Intelligence information is used to select an interrogation approach and may be used during interrogation for illusion-building, as is the case with futility-based approaches (“We Know All”; File and Dossier Approach) (Army Field Manual 2-22.3). Within the Scharff Technique approach, the aforementioned avoidance of questions also serves to strengthen the illusion of knowing-it-all. If the source is not directly asked questions, illusion-building should be more successful and the source should again have a more difficult time determining the information objectives of the interrogator.

The fourth technique is the provision of opportunities to confirm or deny interrogator statements. While the illusion-building phase should include a summary of known information, the confirmation/disconfirmation phase prescribes the interrogator to insert information that he is unsure of (‘unknown’ information) for the source to confirm or deny. For example, intelligence may have been received regarding a planned attack but may not specifically pinpoint the location of the attack. If one of two possible locations is more probable than another, the interrogator should insert this information in the form of a statement. If it is confirmed by the source, that information becomes certain rather than

probable (i.e., new information is gained; 'known' information). Alternatively, if the source disconfirms the statement, the interrogator still gains the sought-after information by process of elimination. Again, the avoidance of direct questioning obscures the information objective of the interrogator and may reinforce to the source that the interrogator knows all, even if the interrogator is only making an informed guess.

Lastly, to uphold the perception of withholding as futile with an all-knowing interrogator, the Scharff interrogator should refrain from reacting (i.e., ignore) any new information given by the source. Failure to react to new information is, again, meant to convey that the interrogator is highly informed and thus cannot be surprised by new information. Further, this should cloud the source's ability to ascertain when/if they have provided new or useful information.

Several studies have examined the effectiveness of the Scharff Technique in elicitation (e.g., Granhag, Montecinos, & Oleszkiewicz, 2015; Granhag, Oleszkiewicz, Strömwall, & Kleinman, 2015; May, Granhag, & Oleszkiewicz, 2014). All previous studies of the Scharff Technique used the same general paradigm. Participants are recruited to engage in a role-playing study in which they read a scenario detailing a planned terrorist event. In the scenario, an extremist group is planning to detonate a bomb at a busy shopping mall. Participants are given information about the group's members and a previous planned attack by the group, as well as details regarding the upcoming attack. Participants are also given background for the role-playing portion. Background role details instruct the participant to imagine that they had committed an armed robbery prior to meeting one of the members of the extremist group. Participants are told to imagine that they have contacted law enforcement to trade information on the extremist

group for immunity from prosecution for the armed robbery. Further, they are instructed to strike a balance between giving too much and too little information lest the group members find out they have been betrayed (i.e., giving too much information), or law enforcement decide that they have not been sufficiently cooperative to warrant immunity (i.e., giving too little information). Participants are then given time to plan their strategy for the interrogation. In all studies of the Scharff Technique participants are interrogated using either the Scharff Technique or the Direct Approach, which consists of open-ended and cued questions regarding the target information as described in the Army Field Manual (2-22.3).

Well over fifteen studies have been conducted in order to examine either the overall effectiveness of the Scharff Technique (e.g., Granhag, Cancino Montecinos, Oleszkiewicz, 2014), its individual components (e.g., dis/confirmation tactic) (May, Granhag, & Oleszkiewicz, 2014), or its effectiveness in various contexts such as with more or less cooperative sources (Granhag, Oleszkiewicz, Strömwall, Kleinman, 2015) or across repeated interrogations (Oleszkiewicz, Granhag, & Kleinman, 2017). Previous research (e.g., Granhag, Kleinman, & Oleszkiewicz, 2016) typically finds that the Scharff Technique outperforms the Direct Approach in terms of elicitation outcomes. First, the Scharff Technique has been found to influence the perceptions of participants such that interrogator objectives are obscured in the Scharff condition compared to the Direct approach condition, meaning participants in the Scharff condition rate themselves as having more difficulty in understanding what information the interrogator sought. Further, in comparison to the Direct Approach, participants in the Scharff condition rate the interrogator as holding more information prior to the interrogation and rate

themselves as having given less information during the interrogation. When objective measures of information gain and interrogator knowledge are scored, participants in the Scharff condition consistently underestimate how much information they have given overall and overestimate how much information was known by the interrogator prior to the interrogation. In contrast, participants in the Direct condition consistently overestimate the amount of information they have given. Given the above-described results, research on the Scharff Technique consistently suggests the technique is effective at elicitation. In addition to these elicitation specific outcomes, participants also tend to give more new information when the Scharff approach is used compared to a Direct Approach.

In one test of the Scharff Technique (Oleszkiewicz, Granhag, & Kleinman, 2017), experienced handlers (i.e., police officers who are in contact with and manage Confidential Informants) from the Norwegian police force were trained (or not) in using the Scharff Technique. Handlers then interrogated student-sources who had read the scenario described previously (i.e., background and attack-relevant information regarding the bombing of a shopping mall). Again, student sources interrogated using the Scharff Technique rather than with a Direct Approach had a more difficult time determining interrogator objectives, underestimated the amount of new information they had given, and overestimated the amount of knowledge held by the interrogator prior to the interrogation. In addition, interrogators trained in the Scharff Technique were able to obtain more new information than those who had not been trained in the Scharff Technique.

The Scharff Technique has been shown to be effective in comparison to the most commonly used Army Field Manual interrogation approach (i.e., the Direct Approach), including when implemented by experienced practitioners (e.g., Oleszkiewicz et al., 2019). However, there are potential issues with this line of research. First, the Scharff Technique has not been compared to an interrogation approach other than the Direct Approach. It still remains to be determined whether the Scharff Technique outperforms other Futility Approaches such as ‘We Know All’ or the File and Dossier Approach. In addition, in the study that included practitioners the interrogation tactics used by handlers who were not trained in the Scharff Technique were not specified (Oleszkiewicz et al., 2017). Thus, while the Scharff Technique is known to be effective in comparison to the Direct Approach, it is unknown whether the Scharff Technique is more effective than other approaches described in the Army Field Manual.

Second, the role-playing scenario methodology used in the paradigm may be problematic. Research on the Scharff Technique has always employed the same role-playing paradigm in which participants must imagine they hold vital information on a terrorist attack. While the Scharff Technique’s results are remarkably consistent across studies, it is unclear whether role-playing paradigms in which participants are explicitly instructed and given an opportunity to a) plan a strategy, b) memorize details, and c) strike a balance between giving too much and too little information result in similar findings to more realistic paradigms.

When testing interrogation methods it is unclear if the mindset of participants varies in response to role-playing methods versus paradigms that are highly realistic for participants- a phenomenon known as experimental or psychological realism (Evans et

al., 2013; Houston Meissner, & Evans, 2014). To propel progress in the field of interrogation study as a whole it is vital to show convergent validity- the notion that obtaining similar results across different paradigms and conducted in different contexts provide valid evidence of proof of concept. For example, if an observational study of interrogations at a particular police station (Leo, 1996) finds that the provision of fabricated evidence (i.e., non-existent or ploy evidence) may lead to increased confession rates, obtaining high false confession rates in response to false evidence plays in the laboratory provides corroboration. Ultimately, such corroboration serves to bolster the validity of the both paradigms as vastly different data collection methods arrive at the same result. In the case of the current study, if the use of a realistic paradigm leads to the same results found in previous research, the concept is validated and it is more likely than not that both paradigms are portraying an accurate depiction of the problem as it truly occurs. As such, it is important to address the notion of convergent validity as it relates to the effectiveness of the highly successful Scharff Technique to begin to move from the laboratory to implementation in the field. It is reasonable to expect that outcomes may vary as a function of the paradigm used to test the Scharff Technique (and other interrogation methods). It is unclear whether a student participant's behavior in response to being asked to role-play as a criminal with terrorist ties (a very unfamiliar situation) differs from the behavior of student-participants interrogated regarding something they actually experienced, or believe to be real, and that is more relatable to their own life experiences. One pressing issue in this respect is that undergraduate students likely have very little experience with general crime, but are even less likely to have any experience in extremism or the planning of terrorist events. As such, it may be that the design of the

Scharff paradigm forces student participants to draw upon schemas and stereotypes of criminals and extremists when taking on their roles, rather than providing naturalistic responses.

Schematic Frameworks and Imagining Terrorism

Schemas are cognitive frameworks for the organization of knowledge and are largely constructed from prior experiences (Koriat, Goldsmith, & Pansky, 2000). Schemas are often drawn upon for both decision-making and problem solving. When faced with a novel situation, we rely on our schemas to inform us of what to expect and how to behave. Schemas also serve as a framework around which to integrate new information as they provide a basis for processing and categorizing information prior to storage to maximize the potential for successful future recall. Essentially, because cognitive systems are predisposed toward efficiency, we do not store and recall events, experiences, and general knowledge verbatim. Rather, we encode and store gist-level information which we reconstruct during recall. Because schemas are derived from prior experience, when have no prior experience on a particular topic we are forced to rely on the very general schema-related information we possess. We also tend to remember schema-consistent information quite well, while schema-inconsistent information is often passed over and forgotten (Brewer & Treyens, 1981).

Brewer & Treyens (1981) conducted a classic study in which student participants were asked to wait in the experimenter's office prior to the study session. However, the true purpose of the study was to determine participant's recall accuracy for schema-consistent and schema-inconsistent information. After waiting 35 seconds in the office, participants were asked to recall every object they had seen in the office while waiting.

Participants displayed high accuracy for recall of items typical of office settings (e.g., desk, chair) but poor recall for items that one would not expect to see in an office (e.g., wine bottle, picnic basket). The tendency to remember expected items and concepts has also been found to contribute to several applied phenomena. In another classic study, Bartlett (1932) had English school children read a Native American myth containing very specific cultural expressions and later tested recall for the story. Because the processing and interpretation of information relies partially on prior experience, participants displayed a particular inaccuracy for story information that did not match their own cultural experiences. In the applied sense, schema formation is closely related to stereotyping and has also been found to contribute to the formation of false memories (Koriat, Goldsmith, & Pansky, 2000) and distortions in eyewitness memory (Fisher & Geiselman, 1992).

In the case of role-playing in HUMINT research student participants have little experience with illegality or crime and likely have no personal experience with terrorism. As a result, participants must rely on the only information their schemas contain in relation to terrorism (e.g., television, news media). American participants may, for example, be reminded of the September 11th attacks and associate terrorism with middle eastern individuals such as those belonging to the Taliban or Al Qaeda. Participants may also rely on television depictions of terrorism which are often not representative of the norm. Given that schema consistent information is recalled more often and more accurately, participants in previous studies of the Scharff technique may be more likely to recall information from the scenarios they read that is consistent with such depictions while forgetting information that does not conform to their often inaccurate imaginings of

terrorism because they have little other information on which to rely. Consequently, participants in role-playing studies may also behave in an exaggerated way during interrogations in such studies because lack of personal experience forces them to rely on sensationalized media depictions and dramatized television portrayals of terrorists. It is therefore possible that changing the experimental paradigm will result in outcomes that differ from those found in previous research. Because quite a bit of research has been done to examine the Scharff Technique specifically, it is vital to address this issue before practitioners are encouraged to use the Scharff Technique (Oleskiewicz et al., 2017). Testing the utility of the Scharff Technique in a paradigm high in psychological realism in order to provide evidence of convergent validity is a primary objective of the current study; subsequent sections will address factors that are necessary to accomplish this end.

Mirroring Real-World Conditions in the Study of Interrogation

There is often a disconnect between practitioners and researchers such that research is difficult to incorporate into practice. Practitioners may not see the value of laboratory research to the real world and argue that laboratory conditions do not mirror the situations they see in practice (Copes, Vieraitis, & Jochum, 2007). On the other hand, researchers argue that it is important to study the potential mechanisms behind psychological phenomena in controlled settings where ground truth of guilt or innocence is certain. Interrogation research may face similar resistance from practitioners in that field research (e.g., examination of contributing factors in wrongful conviction, Drizin & Leo, 2004; observational study of interrogations, Leo, 1996) may be viewed as having greater validity as findings relate specifically to the problem as it occurs in the real world. On the other hand, researchers are aware that field research does not allow for the control

of key variables, and therefore for causal determinism; further ground truth (e.g., culpability status, number of details held by an interviewee) is unknown. Without a means of addressing such divides, empirically-validated recommendations may not be incorporated into practice while untested practices may be implemented.

An issue related to the field-laboratory divide is that laboratory paradigms take many forms, some of which may be inadequate for policy and practice recommendations (Telep, 2013). The example of interest to the current study is that of the paradigm used to test the Scharff Technique. Although the Scharff Technique is apparently effective in terms of elicitation, it is imperative that the results obtained in previous research are replicated in more realistic contexts to provide evidence of convergent validity. Without rigorous testing across contexts practitioners may be a) reluctant to incorporate useful research simply because it is not based on a realistic paradigm or b) wrongly incorporate research that has not been rigorously tested in multiple contexts.

The field has made great strides in the study of interrogation overall but has a rather long way to go if we are to truly understand the psychological mechanisms underlying interrogative behavior. It is imperative that new paradigms are developed in which real-world conditions are replicated and interrogative behavior is examined in a variety of situations. In other words, it is important that the paradigms used to study interrogation are high in external and ecological validity. The current study aims to address several of the gaps that are present in the research paradigms used to study interrogation generally, and elicitation specifically. Thus, below I will discuss two foundational interrogation paradigms used in the study of criminal interrogation in order to transition to the HUMINT context. I will then highlight important elements in the

study of HUMINT interrogation that require empirical examination: psychological realism, and isolation.

Interrogation Paradigms

Kassin and Kiechel (1996) provided one of the first experimental paradigms for the study of interrogation and false confession. Participants were asked to complete a typing task without pressing a “forbidden” key (i.e., the ALT-key). The computer subsequently crashed for all participants and participants were asked to sign a confession admitting to pressing the forbidden key and causing the crash. Although the Kassin and Kiechel (1996) study was highly innovative as the first experimental paradigm for the study of interrogation, it cannot be argued that it provides external validity by replicating real-world conditions. The primary criticisms of the method are that a) participants were all factually innocent, so the methods cannot tell us about the behavior of guilty individuals, b) the alleged transgression was not intentional, making it possible for participants to be unaware of their own guilt status, and c) there were only minor consequences for making an admission (i.e., receiving a phone call from the principle investigator).

Subsequent to the development of this “ALT-key paradigm,” Russano, Meissner, Narchet, & Kassin (2005) developed a paradigm higher in psychological realism in order to study interrogation. Undergraduate participants were asked to complete one task individually and then complete a second task with another student (who in fact was actually a confederate member of the research team posing as a participant). During the individual portion of the task, the confederate either induced the participant to cheat or not (depending on the randomly assigned culpability condition) by the confederate asking

for an answer to one of the individual task questions. Later all participants were told that the experimenter was certain they had cheated and that the cheating could be considered a case of academic misconduct. Participants were then interrogated and asked to sign a "confession" stating that they had broken the experimental rules.

The ALT-key paradigm is useful in examining false admissions of wrongdoing, but many participants likely believed it possible that they could have pressed the key accidentally and were thus actually responsible for the crash. As such, participants may have believed they made a true rather than false confession. Results from the Kassin & Kiechel study (1996) suggest that participants tend to internalize accusations such that they may actually come to believe that they did press the forbidden key. In fact, 65% of participants made statements suggesting that they had internalized blame for the incident. Furthermore, researchers had no ability to determine whether or not participants had actually pressed the ALT-key and ground truth was therefore unknown; as such the researchers could not be fully confident if a confession was false. In addition, there were minimal consequences for confessing, either falsely or truly. It may be that the high false confession rate found in the original ALT-key study- approximately two-thirds of participants 'confessed'- was the result of participants' disregard for the allegation because of the lack of consequences. In other words, participants may have decided that there was no point in arguing and so acquiesced to the researcher's demands in order to end the experimental session. In a real-world interrogation, a suspect who falsely confesses may face consequences ranging from a fine to probation to a prison sentence to capital punishment while sources of information in HUMINT contexts face potential

retribution from high value targets or extremist groups, isolation from their communities, and potential prosecution.

Russano et al.'s (2005) "cheating paradigm" improved upon the ALT-key paradigm in several ways. First, the cheating paradigm improved upon the ALT-key paradigm's lack of meaningful consequences by creating a high-stakes situation. Students are fully aware that cheating is a serious offense in the eyes of the university, and student participants presumably wish to maintain their academic standing. In addition to creating a higher stakes situation, the cheating paradigm allowed for the examination of the behavior of both guilty and innocent "suspects." Because of these improvements, the cheating paradigm has become the gold standard in interrogation research. Notably, however, both the ALT-key paradigm and the cheating paradigm suffers from a similar issue that is reflective of the most substantial difference between HUMINT and criminal interrogation contexts. The goal of each procedure was simply to examine baseline rates of a confession to a single 'event,' rather than to examine overall information gain. A lack of focus on information gain therefore provides a serious impediment to the study of elicitation and information gain in HUMINT contexts.

In the original cheating paradigm participants engaged in a very simple transgression by providing an answer to an 'individual question' to a confederate in defiance of the experimental rules. Thus, even a fully cooperative interviewee would not be able to provide many details to an interrogator. The original paradigm may therefore be inappropriate for the study of intelligence-gathering. Evans et al. (2013; 2014) adapted the cheating paradigm for use in HUMINT contexts such that the cheating event was expanded to allow for a greater number of details to be generated than in the original

paradigm. Rather than having a confederate ask participants for answers on a test, Evans et al. (2013) had the confederate use a 'cheat sheet,' which participants were told had been obtained from a previous participant, to answer the general knowledge trivia questions. Upon finding that the sheet did not contain the necessary answers, the confederate used a phone, against experimental rules, to call a friend to get the correct answers, and then copied the questions and answers down for a friend who the participant was told would be participating in the study at a later time. In the initial study using this paradigm (Evan et al., 2013), participants were subsequently interrogated using either an information-gathering approach or a confrontational approach.

In a second study, Evans et al. (2014) examined the effectiveness of positive and negative emotion-based approaches outlined in the Army Field Manual of interrogation (2-22.3). In comparison to a Direct questioning interrogation approach, both positive (e.g., flattery, minimization of the seriousness of the offense) and negative (exaggeration of seriousness, increased anxiety) approaches yielded more information. However, positive approaches were more effective in reducing the anxiety and stress felt by participants.

In the only other study to directly test interrogation approaches as described in the Army Field Manual, Duke et al. (2018) used the same modified cheating paradigm to examine the effectiveness of cooperation-focused approaches in comparison to withholding-focused approaches. The withholding-focused approach, 'We Know All,' falls under the futility-based approaches of the Army Field Manual, which aim to lead interviewees to perceive that it is pointless to withhold information from highly knowledgeable, or seemingly omniscient, interrogators. Although both categories of

approaches were conducive to building rapport between interrogators and sources, the We Know All approach was particularly effective in eliciting accurate information in comparison to cooperation-focused approaches. The current study tested a similar futility-based interrogation protocol, the File and Dossier Approach.

Psychological Realism. A key contribution of the cheating paradigm is its high level of psychological realism. High realism can be contrasted with the role-playing paradigm used to study the Scharff Technique. Participants who are asked to role-play, as in previous research (e.g., Oleszkiewicz et al., 2014), intentionally memorize necessary details immediately prior to the interrogation, are aware an interrogation is forthcoming, are told to develop a strategy for the upcoming interrogation, and are told explicitly to use a specific approach to withholding or revealing (“do not reveal too much or too little”). In a more naturalistic setting, participants and real-world sources may not be aware of the importance of the interactions and events they experience in relation to a target, group, or event and may therefore hold fewer or different details as they may not know that they need to pay attention to them in the first place. In other words, they may or may not remember the key details. In addition, interrogation for the purposes of HUMINT collection may be unexpected, meaning that sources may not have the ability to develop a specific interrogation strategy ahead of time. It is reasonable to assume that participants who are informed of the purpose of the study (researching interrogation approaches) and who are told how to behave, and who are provided a full account of the necessary details, will differ from those who are not expecting an interrogation to occur. It is likely that such participants will differ from role-playing participants in a variety of ways ranging from their perceptions of the interrogation/interrogator to their feelings regarding being

interrogated, as well as in their general information-management strategies and the type of information they reveal and withhold. Finally, participants who are aware that they are only role-playing as interviewees (e.g., informed that the event is not real and that they will be playing a role) may take the interrogation less seriously and will plan for it with less effort in addition to being less engaged in the task overall.

The importance of psychological realism in interrogation research has been stressed in the previous literature on police interrogation (e.g., Kassin & Kiechel, 1996). The previously discussed gap between research and practice may be attributed partially to the tendency to create paradigms for laboratory study that are low in psychological realism (e.g., role-playing paradigms), as such paradigms may encourage reliance on schemas by student participants who have no practical or real-life experience with the phenomena of study and therefore do not behave naturally. It is not practical to use a role-playing paradigm in some interrogation studies (e.g., those examining false confessions) but such paradigms are used often in deception detection and information-gathering or elicitation research (e.g., Oleszkiewicz et al., 2014; Vrij, Granhag, Mann, & Leal, 2011; Vrij, Leal, Mann, & Granhag, 2011). As such, it is crucial that the issue of realism be addressed directly, both for the sake of extending previous research through the creation of new paradigms and to address the issue of the applicability of field versus laboratory research on interrogation. Although the current study does not provide a direct comparison of paradigms that are low versus high in psychological realism, it is necessary to create paradigms which are applicable to individuals outside of university settings (e.g., community members) and in order to further explore nuances in behavior during information-gathering. Intelligence-gathering research cannot provide a full

picture of the phenomenon if paradigms are applicable to students rather than the general population. Furthermore, it is critically important to increase the degree to which interrogation research, generally, can mirror interrogations in the field in order to move research from the domain of experimentation to that of practice. To that end, the current study implements several important elements beyond high realism by: examining the efficacy of interrogation approaches currently in use in the field; b) providing a paradigm which generates a large amount of relevant information sufficient to mirror the detail-rich context of real-world events; and the isolation of elements that likely influence which the effectiveness of interrogation approaches such as group size and isolation.

Group size. Few studies have examined the interrogative behavior of individuals who were part of a group that experienced the same series of events. Rather than examining information gain, previous research using groups of participants has focused on use of counter-interrogation strategy (e.g., Granhag, Mac Giolla, Strömwall, & Rangmar, 2013) or cues to deception in the planning of intended (future) events (Granhag, Rangmar, & Strömwall, 2015). To the author's knowledge, only one study has examined elicitation and information-gain in a HUMINT setting with small groups of participants (versus individuals). In a test of the Scharff Technique's effectiveness (Granhag, Oleszkiewicz, & Kleinman, 2016), participants completed the standard paradigm used in Scharff studies (previously described) but were able to plan for the interrogation as a group of three. Participants were then separated for interrogation. Each participant was told that they were the last to be interrogated and the information gained in each interrogation was incorporated into subsequent interrogations in order to build the illusion of knowing-it-all. Although the Scharff Technique and Direct Approach

interrogation conditions generated a similar amount of new information, the Scharff Technique led participants to underestimate their own contribution of information. In addition, participants overestimated the contribution of their fellow group members.

The current study advances the existing literature by examining elicitation outcomes when individuals experience the same event but are unable to engage in coordinated planning for an interrogation caused by separation, as high value targets are when detained and interrogated in custodial settings (e.g., Guantanamo Bay). In addition, the current method allows for examination of intelligence-gathering when group members are not directly involved in the planning of a target event at all. Finally, the use of groups rather than a single individual provides the opportunity for enough information to be generated during the experimental session to examine the techniques of interest, the Scharff Technique and its Army Field Manual equivalent, the File and Dossier Approach. In paradigms such as the cheating paradigm described previously, the number of details generated may be sufficient for the study of HUMINT interrogation in general, but it may not be possible to generate the number of details necessary for the illusion-building component of the Scharff Technique.

Isolation and separation. As alluded to earlier, another factor important in providing a more realistic setting for the study of interrogation, and the final variable to be examined in the current research, is isolation. Police interrogations notably employ methods meant to manipulate suspects' sense of autonomy through physical isolation and loss of control (Kassin et al., 2010; Leo, 1996a). Isolation has been used historically as an indoctrination and interrogation tactic (Romero, 1985; Farber, Harlow, & West, 1957), as a means of cutting detainees off from individuals who share similar beliefs and goals, and

as a means of creating a general sense of dependence on one's captors. The physical isolation of a source may lead to feelings of increased anxiety, which then advance the goal of interrogators in posing as the detainee's only source of help or aid (Army Field Manual, 2-22.3). In the context of detainment of enemy Prisoners of War, analysis of the prevalence of Posttraumatic Stress Disorder and self-reported subjection to physical and psychological methods of torture, psychological methods of stressing detainees were found to be equivalently impactful to physical methods (Başoğlu, Livanou, & Crnobarić, 2007). Although so-called "enhanced interrogation" techniques such as sensory deprivation and the use of stress positioning are no longer condoned by the US military, separation from family, friends, and fellow detainees remains acceptable in some circumstances, and prolonged isolation is also condoned provided that authorization is obtained first (Army Field Manual, 2-22.3).

The Army Field Manual specifically states that separation can be used when a source who possesses valuable intelligence must be prevented from contact with other detainees. A lack of separation may allow sources to provide to provide information to other detainees that can be used for counter-resistance or to add to deceptive cover stories for sources who have not yet been interrogated. Separation, a restricted interrogation technique, is also authorized for use when standard interrogative approaches fail and is said to decrease resistance to interrogation by increasing both the anxiety felt by the source and the need for human interaction, even if that interaction is with an interrogator or interpreter. Although the use of separation as outlined in the Army Field Manual is interesting in its own right, the Army Field Manual description refers to periods of

isolation lasting up to 30 days or more. The current proposal relates to the use of isolation in a much more limited manner.

In a survey of police beliefs and practices, Kassin et al. (2007) found that isolation and separation of criminal suspects was the most commonly used tactic across a sample of 631 police investigators. In fact, the use of isolation was more common than many tactics that are popularly focused on in the literature (see Kassin et al., 2010), such as confrontation with evidence, minimization, appeals to self-interest, and rapport-building, with two thirds of participants stating that isolation is "always" used and only 2% of participants stating that isolation was "never" used. As such, recommendations for the isolation of suspects in an attempt to manipulate feelings of anxiety and perceptions of the interrogator are an inherent part of both law enforcement (Inbau, Reid, Buckley, & Jayne, 2001) and military (Army Field Manual, 2-22.3) interrogations. While the use of prolonged isolation should not be condoned, it is important to understand the effect of minimal isolation on interrogation outcomes. This is particularly true for HUMINT contexts, as small cells of individuals in custodial settings must necessarily be separated for later interrogation. In addition, group separation provides a valuable opportunity for interrogators to use their previous interrogations with other group members as leverage for subsequent interrogations by noting, and perhaps pointing out, inconsistencies and conflicting information provided across interrogations with different sources.

For example, in the few studies that have been conducted in order to examine true and false statements of intention among pairs, triads, or quartets of individuals, participants are asked to plan together and then separated for interrogation (e.g., Granhag, Oleszkiewicz, & Kleinman, 2016; Sooniste, Granhag, Strömwall, & Vrij, 2016). It is

unclear whether separation had any effect on participant behavior because the length of time participants waited for their interrogation is not described or systematically examined. It is reasonable to predict however, that individuals who are interrogated after longer periods of isolation may feel more anxious than individuals who are interrogated after shorter periods of isolation, as they have more time to think about the questioning and worry about its purpose and consequences. If individuals possess relevant or guilty knowledge, they may also feel anxious over decisions regarding how they will strategically approach the interrogation, particularly if other group members may have already been questioned. Alternatively, it could be that individuals who have more time in isolation are able to develop more effective Counter-Interrogation Strategies, thus better preparing them to engage in resistance strategies such as misleading and withholding during the interrogation.

Objectives of the Current Study

Given the literature reviewed above, the current study aims to address several gaps. While the modified cheating paradigm (Evans et al., 2013; 2014) is an excellent first step in the study of HUMINT interrogation, the number of details generated in the Evans paradigm may still be insufficient for highly realistic examination of elicitation, especially when using methods that require building an illusion of full knowledge. The most empirically well-supported method of elicitation, the Scharff Technique, relies on such illusion-building. Approaches such as the Scharff Technique are not possible to study if the interrogator does not have enough information to summarize or to provide a basis for the initial illusion-building phase and subsequent confirmation/disconfirmation claims. It is also vital to address the gap in the literature regarding the use of role-playing

versus psychologically realistic paradigms in the study of Scharff interrogations by assessing the presence of convergent validity. While the Scharff Technique has proven itself to be remarkably effective at elicitation in comparison to the Direct questioning approach to interrogation, it has been evaluated solely through the use of a singular role-playing paradigm. The question of whether the role-playing method of study is sufficient as a basis for training real-world practitioners remains unanswered. Although it is believed that role-playing participants will vary from participants engaged in a psychologically realistic event on dimensions such as interrogation strategy and motivation, the Scharff Technique should result in similar benefits in terms of information gain and elicitation outcomes if it is as effective as the previous research suggests.

Previously, the Scharff Technique has only been compared to interrogations consisting of open-ended and direct/cued questions (i.e., a Direct Approach). If the Scharff Technique is meant to further the goal of elicitation through prevention of Counter-Interrogation Strategies such as withholding and repetition of previously stated information, its effectiveness at accomplishing this end must be directly compared to other methods aimed at doing the same. In addition to providing a novel and realistic paradigm, the current study will compare the Scharff Technique and Direct Approach interrogations to a previously untested-Army Field Manual approach that is also meant to convey an illusion of knowing-it-all, the File and Dossier approach. The inclusion of the File and Dossier approach also serves an additional purpose by adding to the work conducted by Evans et al. (2014) and Duke et al. (2018) of testing methods from the Army Field Manual. Currently endorsed HUMINT interrogation approaches set forth by

the United States government have been in use without regard to their lack of empirical testing. In high-stakes contexts like those inherent in terror attacks, it is vital that the most effective methods possible are used. Given previous highly publicized abuses of detainees at United States government run facilities (e.g., Abu Ghraib) regarding ‘enhanced’ interrogation techniques (e.g., waterboarding, stress positioning), it is equally vital to balance the need to obtain valuable intelligence information with humane and ethical interrogative approaches that may be vastly more reliable. Finally, the current study will examine the impact of pre-questioning isolation (a commonly used tactic) on source behavior.

Hypotheses

We predict several findings to result from the current study. In terms of the effects of the interrogation approach variable, the Scharff Technique and the File and Dossier approach are expected to result in a greater amount of new information gathered from the sources compared to the Direct Approach (Hypothesis 1). However, participants in the File and Dossier Approach condition are expected to outperform those interrogated using the Scharff Technique and Direct Approach in the elicitation of total overall information (Hypothesis 2). Participants in the Scharff Technique and File and Dossier approach conditions are expected to estimate that the interviewer holds more information prior to the interrogation in comparison to the Direct Approach interrogation condition (Hypothesis 3). Participants in the Scharff Technique should underestimate their information contribution while participants in the Direct Approach and File and Dossier Approach conditions should not (Hypothesis 4). The File and Dossier Approach contains an illusion-building component similar to that of the Scharff Technique, but also involves

the use of questions. This may lead participants to perceive gaps in the knowledge of interrogator as the illusion-building relies more on props (the Dossier) than extensive utterances by the interrogator. The Scharff Technique is predicted to outperform both the Direct Approach and File and Dossier Approach in obscuring the information objectives of the interrogator (Hypothesis 5). Specifically, participants interrogated using an approach that contains statements rather than questions (the Scharff Technique) should have a more difficult time determining the information objectives of the interrogator compared to sources interrogated with approaches that employ the use of direct questions (Direct Approach and File and Dossier Approach).

Lastly, because isolation and separation are used to prevent coordination and facilitate a sense of reliance on the interrogator, I expect that participants who are interrogated later (i.e., after a longer delay) will differ in their perceptions of their own information contribution and the perceived knowledgeability of the interrogator from those who are interrogated earlier (Hypothesis 6). Namely, participants interrogated last should perceive the interrogator as more knowledgeable by virtue of their having spoken to other participants first. As a result, sources should also perceive themselves as having given less new information when interrogated later as opposed to earlier.

III. METHOD

Design. The current study conformed to a 3 (Interrogation Approach: Direct Approach vs. Scharff Technique vs. File and Dossier Approach) x 4 (Interrogation Order: First vs. Second vs. Third vs. Fourth) between-subjects design. Note that while up to four

participants could sign up per session, most groups consisted of only two to three real participants and a confederate.

Participants. Participants were recruited from the student body at Florida International University. A total of 166 participants were recruited. After excluding participants who did not complete the full session ($n = 2$) and those who did not consent to have their recordings used ($n = 3$), the final sample for the current study consisted of 161 participants. The majority of participants were female ($n = 115$; male $n = 46$) and Hispanic ($n = 100$). The remaining participants identified as African-American ($n = 31$), Caucasian ($n = 14$), Asian ($n = 8$), or ‘Other’ ($n = 8$). More than half of participants identified as native English-speakers ($n = 84$); the remainder of participants identified as native Spanish-speakers ($n = 63$), Creole speakers ($n = 9$) or ‘Other’ ($n = 5$), including French and Arabic. Nearly two-thirds of participants spoke more than one language ($n = 103$). Participants were asked to rate their English fluency on a scale of 1 (Not at all Proficient) to 7 (Fluent). Three participants provided a rating lower than 5 and no participant provided a rating of 1. Fluency ratings were generally high ($M = 6.76$, $SD = .69$).

Most participants considered themselves either politically moderate ($n = 62$) or liberal ($n = 63$). Only 16 participants identified as politically conservative while 19 stated that they were undecided and one participant did not list their political views. Similarly, a large number of participants affiliated themselves with the Democratic party ($n = 66$) or were undecided ($n = 41$). The remainder of participants affiliated as Independent ($n = 24$), Republican ($n = 21$), Libertarian ($n = 3$) or Other ($n = 6$; e.g., “no affiliation,” green party). The majority of participants stated that they did not volunteer (“No”; $n = 115$) or

have interest in larger social issues (“No”; $n = 80$). Of the participants who did have an interest in various social issues, 17 specifically stated interest in either environmental or animal rights issues. Of these, ten participants explicitly mentioned that they engage in volunteer work focusing on either animal rights or environmental issues.

Materials and Procedure

Phase 1. Phase 1 consisted of a short online survey administered via Qualtrics that participants completed prior to the in-person Phase 2 session. The Qualtrics survey consisted of an informed consent page and several questionnaires aimed at general personality characteristics in addition to several scales meant to measure both risk-taking behavior and hostility (see Appendix A). The scales completed by participants consisted of: the big five personality inventory (Goldberg, 1992); the partial DOSPERT risk-attitudes scale (Weber, Blais, & Betz, 2002; Blais & Weber, 2006); and the Buss-Durkee Hostility Inventory (Buss & Durkee, 1957). The purpose of Phase 1 was to gather information to increase the believability of the illusion-building process in the Scharff and File and Dossier Interrogation conditions as both interrogation approaches require some basis for holding relevant information prior to questioning. For example, in the illusion-building phase of the Scharff Technique the interrogator stated that “people who are high in neuroticism and low in conscientiousness” (factors measured by the Big Five) tend to be involved in “these kinds of things” more often. Because the survey materials administered in Phase 1 were only used as a means of leverage during the File and Dossier Approach interrogations, it will not be discussed further throughout the remainder of the dissertation.

Phase 2. Phase 2 consisted of an approximately 2 hour long in-person study session. Recruitment materials contained a cover story which told participants that the purpose of the study was to examine group dynamics among college students. Participant sign-ups allowed for up to four participants per group. One study confederate, a member of the research team, was also present at each session and completed all tasks completed by participants with the exception of the interrogation and post-interrogation measures. Throughout the experimental session the trained confederate participant gave a set of scripted lines, and later served as the person of interest during the interrogation (see Appendix B for the full confederate script). Total group size could therefore have ranged from a pair (one actual participant and one confederate) to five individuals (four actual participants and one confederate), depending on how many people signed up for the session.

Upon arrival to the study session participants and confederates were given a consent form and asked to complete demographic forms. All group members were assigned a chronological group number on a per group basis as well as an individual letter corresponding to their randomly assigned interrogation order to create a unique participant identifier. For example, the identifier ‘60A’ would refer to the individual interrogated first in the sixtieth session to be run.

Subsequent to completing the initial demographics forms, the experimenter reminded the participants that the purpose of the study was to investigate group dynamics among college students when discussing controversial issues and asked the participants to introduce themselves to the group by sharing some basic information about themselves (major, year in school, hobbies, etc.). Following introductions, participants were told that

they would then complete a short team-building activity in order to get to know each other better and to facilitate comfort during the eventual group discussion portion. The experimenter gave instructions for the activity and subsequently left the room. The group activity was a short game entitled “Truth or Lies” in which each participant had to make three statements about themselves to the group- two true statements and one false statement- and the other group members were asked to guess which of the three statements were the lie. During the activity, the confederate delivered three scripted statements: 1) that they volunteer at a wildlife rehabilitation center (purportedly true); 2) that they are going to the everglades the following weekend to attend an event with a few friends (purportedly true); and 3) that they have traveled to 30 different countries (lie). While participants were waiting for the experimenter to re-enter the room, the confederate reminded participants that they were traveling to Everglades National Park with friends the following weekend and asked if anyone had ever rented (or knew how to rent) a car and specifically stated that they would likely need a van because a large number of people would be going and they would also be bringing ‘equipment.’ The confederate’s aside regarding vehicle rental was included to restate the basis (unspecified event) for later questioning, increasingly the likelihood that participants would remember the information.

After the group activity was completed, participants were given a list of the group discussion questions (Appendix C) and were told that they needed to answer the discussion questions individually before the discussion begins to gauge the impact of group discussion on people’s beliefs. Participants were told that they should not write their names or identification numbers on the form, so that their responses remained

anonymous, and were given approximately ten minutes to respond to all questions. There were five group discussion questions in total, regarding topics focused on moral and ethical issues including: student lending (neutral question); single vs. third party health insurance policies; culling of overpopulated animal species (deer); breed specific legislation for dogs; and driverless car programming. After providing individual responses to the discussion questions the experimenter entered the room and informed participants that the group discussion could begin after the group elected a moderator for the discussion. The experimenter informed the participants that the moderator would ensure that every group member responded to each question, that group members did not speak over one another, and that group members were respectful of one another's opinion. Regardless of whether other group members volunteered to serve as moderator, the study confederate was always chosen. The experimenter then handed the confederate a list of the same discussion questions previously answered by participants individually, told participants that they would need to spend 30 minutes discussing, and exited the room. Participants were not required to write anything on the group discussion form (held by moderator/confederate) and were simply required to discuss aloud. The group discussion was not recorded.

During the discussion, the confederate made several more scripted statements that served as key details during the later interrogation portion of the study (again, refer to Appendix B for the full confederate script). In total, the confederate gave 30 details over the course of the study session, nine of which were specifically related to the 'event' participants would later be questioned about. First, the confederate responded to the healthcare question by saying that the issue was personal to them because they have a

family member with a serious illness for whom healthcare coverage has not been adequate. The purpose of discussing a personal hardship was to create sympathy for the confederate so that participants were motivated to refrain from fully disclosing all information given by the confederate (i.e., refrain from “telling on” the confederate) during the interrogation phase. Relevant to the event of interest was a question asking about the morality of culling animal populations in response to overpopulation. Here, the confederate responded that it is “not right” to kill animals simply because people would like to live in the area and stated that animals are continuously in danger as a result of human activity. The confederate went on to describe an oil company that was attempting to obtain rights to drill for oil in the Everglades, an area with several critically endangered species of deer. Finally, the confederate showed increasing agitation in regards to animal rights and became increasingly agitated over the subsequent topic regarding whether breed specific legislation blocking certain dog breeds from public areas is morally permissible or different from discrimination against certain groups of people.

After approximately 25 minutes, the discussion was interrupted by the experimenter who stated that there was ‘an issue’ with the study and the session needed to end immediately. The experimenter additionally stated that the ‘issue’ was related to something that had been written on participants individual discussion forms and that the lab manager wanted to speak with each participant alone. Participants were then led to separate rooms to wait for the interrogator (i.e., the lab manager) who randomly assigned each participant to one of the three Interrogation Approach conditions. The first participant was interrogated no sooner than 5 minutes after separation. All interrogations

were recorded using an audio recorder hidden in the pocket or bag of the interrogator. Immediately after the interrogation, participants were asked by the interrogator to wait in the hallway until the experimenter came with further instructions.

For sessions in which the full team of four Research Assistants were available, a second study confederate probed for suspicion while the participant waited. Suspicion probe confederates, posing as real participants who had arrived early for the next scheduled session, asked participants ($n=93$) a series of questions regarding the procedure and purpose of the study and then provided a rating of the level of suspicion of each participant on a scale ranging from 1 (Not at all Suspicious) to 7 (Extremely Suspicious). Following the suspicions probe, the original study confederate returned to partially debrief the participant and asked a series of questions. During debriefing, participants were asked what they thought consequences of talking/not talking with the interrogator would be. Participants additionally provided three ratings on a scale of 1 (Not at all Believable) to 10 (Extremely Believable) regarding: the believability of the claim that a student had made a threat; the believability that there would be consequences for the student who had made the threat; the believability that there would be consequences for the participant if the student who had made the threat was not discovered. Following the debriefing participants completed a series of questionnaires and ratings.

Initial ratings (see Appendix D) asked participants to rate the other group members and moderator/confederate (e.g., likeability) and several dimensions of the discussion including how interesting and engaging the discussion was on a scale from 1 (Not at all) to 7 (Very).

Post-Interrogation Measures

Following group ratings, participants were asked to rate the interrogation itself on several dimensions (Appendix E). Each elicitation measure (e.g., subjective information contribution, knowledgeability of interrogator, ease of understanding interrogator information objectives) was measured via scaled ratings ranging from 1 to 7. In addition, participants were asked to rate additional dimensions including: how helpful the participant felt; and how honest the participant was; importance of information contributed. Again, participants rated these dimensions on a scale of 1 (Not at all/low) to 7 (Very/High). Participants also responded to multiple choice questions regarding: the attitude of the interrogator (Bored, Friendly, Businesslike, Other); whether they had used any strategy during the interrogation; whether or not they had lied (Yes/No); whether they been deceptive by directly changing details (Yes/No); and whether they had left out information (Yes/No). Participants also received two open-ended questions regarding strategy and deception. If participants responded ‘Yes’ when asked whether they had a strategy for the interrogation they were asked to describe the strategy. If participants selected ‘Yes’ when asked if they had been deceptive in any way other than those listed above, participants were asked to describe how they had been deceptive.

Post-Interrogation Checklists

All details given in the confederate script throughout the entirety of the session were arranged into checklist format and categorized as either background or event-relevant details. After rating interrogation and interrogator dimensions, participants were presented with a checklist (Appendix F) which instructed them to select each detail they had given to the interrogator during the interrogation. After completing this checklist,

participants were presented with the exact same checklist (Appendix G) but were asked to select all the details they believed the interrogator knew prior to the interrogation.

Interrogations

During the interrogation, the interrogator started by informing the participant that a member of the group wrote something threatening in response to the question on deer culling, which mentioned plans to attend an event involving a potentially destructive or illegal protest. Each interrogation, regardless of assigned approach condition, followed a single formula. After greeting the participant and informing them of the threatening statement, interrogators provided an open-ended opportunity to provide information either by asking directly (“is there anything else you can tell me about this?”)(Direct Approach; File and Dossier Approach) or stating that the participant should tell them anything they know (Sharff Technique Approach). Following the initial opportunity to contribute, each interrogation approach focused on three target pieces of information: location of the protest event; when the protest event might occur; and group membership/organization of the protest event. Following the focus on the three key details, the interrogator provided one last opportunity for the participant to provide additional information and then informed the participant that the research team may be in further contact with them in the future about the incident.

Direct Approach

Direct Approach interrogations (see Appendix H) began with a brief summary of the threat made and followed the aforementioned formula. Target details were addressed by asking the participant specific, cued questions in a direct manner. If participants provided no response, responded “I don’t know,” or provided a vague response, the

interrogator re-stated the question more firmly a second time. If the participant provided a vague or non-informative response a second time, the interrogator moved to the next portion of the interrogation. Throughout the Direct Approach interrogation, interrogators were trained to deliver the script in a straightforward and businesslike manner.

Interrogators were instructed to refrain from being overtly friendly.

File and Dossier Approach

The File and Dossier Approach was based on the description provided in the Army Field Manual. The initial portion of the F/D Approach (see Appendix I) contained an illusion-building phase similar to that in the Scharff Technique. The interrogation began with the interrogator arriving with a large binder full of paper. The binder was filled with participant forms filled out by the confederate and members of the research team in order to make the binder appear full of information on participants. The binder was additionally labeled with sections such as “education” and “participant background” which were visible to all participants. The interrogator began by explaining the threatening statement and then stated that they had already talked to other participants. Following this statement, the interrogator stated that he/she believed they already knew everything they needed to know from speaking to the other participants but invited the participant to add any additional information. The next phase of the interrogation consisted of an attempt by the interrogator to reinforce the assertion that the interrogator was highly knowledgeable prior to the interrogation. The reinforcement of interrogator knowledgeability was accomplished by questioning participants on information from the participants demographic form. In between each question, the interrogator flipped to a new (random) section of the binder. Throughout the interrogation the interrogator

continued to appear to shift through the binder as if looking up information. In response to target questions, the interrogator provided a response that indicated that they did not believe the participant was being truthful (“Are you sure about that? That’s now what the other participants said.”). At the conclusion of the interrogation, the interrogator provided a final opportunity for the participant to add additional information and informed the participant that they may be contacted again in the future. Throughout the interrogation, the interrogator was instructed to appear bored, as if the interrogation was a formality.

Scharff Technique Approach

Interrogators using the Scharff Technique Approach (Appendix J) were instructed to take a friendly and conversational tone throughout the interrogation, which began with a summary of the threat that was made. Interrogators then stated that they held quite a bit of information from speaking with other participants and from the forms and surveys completed by the participants. Specifically, the interrogator reminded participants that they had taken an online survey prior to the in-person session (i.e., Phase 1) and indicated that the scores of participants indicated who the threatening individual was. The interrogator additionally used this information to describe the “type” of person that would make such a threat based on the Phase 1 survey data and stated that the participant who made the threat was likely involved in activism. Following the initial illusion-building phase, the Scharff interrogator stated that the participant was welcome to add any additional information they had. The interrogator then moved on to the confirmation/disconfirmation phase. The interrogator made three statements concerning the target details, after each statement the interrogator paused to give the participant the opportunity to confirm or disconfirm the statements. Following the

confirmation/disconfirmation statements, the interrogator provided a final statement inviting the participant to add any additional information and informed the participant that they may be contacted by the research team in the future.

Inter-rater Reliability. Interrogation recordings were transcribed and scored to obtain an objective measure of information contribution (as opposed to the participants subjective perceptions of the information they provided). Scoring criteria were defined as the individual details that were contained in the confederate study session script and thus 24 total details could have been provided during participant interrogations. As such, the individual details that could be scored, directly matched the checklist details provided to participants in order to obtain their subjective perception of the details they had contributed during the interrogation. A primary scorer coded all cases while a secondary scorer independently coded a randomly selected set of 30% of all responses. Interrater reliability for objective detail contribution was high ($\kappa = .85-1.00$) and disagreement among the scorers was resolved through discussion.

New details

New details were defined as those not contained in the Scharff Technique (see Appendix J) illusion-building phase because this approach, in theory, consists of a summary of *known* information. Confirmation/disconfirmation statements and other target variables were not counted as ‘known’ as field interrogations using this approach use *unknown* information for this portion. New detail totals consisted of a summation of the details which were uttered by participants during the interrogation but *not* uttered by the interrogator during the illusion-building phase of the Scharff Technique, regardless of which Interrogation Approach was used during the interrogation. The Scharff Technique

script contained 3 background details from the confederate discussion script (The person of interest is: (1) an activist; (2) interested in animal rights; (3) concerned with environmental activism) and two event-relevant details (the ‘event’ is: (1) related to a company; (2) the related to environmental activism) and these were not counted toward new detail totals.

IV. RESULTS

Unless otherwise specified all analyses consist of a 3 (Interrogation Approach: Direct vs. File and Dossier vs. Scharff Technique) x 4 (Interrogation Order: First vs. Second vs. Third vs. Fourth) between subjects Analysis of Variance. Preliminary results (e.g., group characteristics, level of suspicion) include means collapsed across conditions except where Interrogation Approach or Interrogation Order had significant effects. All post hoc testing used a Bonferroni correction. Note, because conditions were randomly assigned and group sizes varied depending on participant sign-ups, sample sizes differed across both Interrogation Approach and Interrogation Order conditions (Table 1).

Preliminary Analyses: Group and Participant-Specific Outcomes

All participant and group ratings were given on a 1 (Strongly Disagree) to 7 (Strongly Agree) scale (Table 2). Participants found the group discussion to be engaging ($M = 6.48, SD = 0.91$), their group-mates interesting ($M = 6.39, SD = 0.99$), and rated themselves as highly motivated ($M = 6.52, SD = 0.87$) regardless of condition. There was no effect of Interrogation Approach ($\chi^2(2) = 2.88, p = .24$), Interrogation Order ($\chi^2(3) = 4.67, p = .20$) or Group Size ($\chi^2(3) = 1.04, p = .79$), on whether or not participants felt they had enough information to be successful during the interview. Finally, participants were asked to classify the demeanor of the interrogator in order to examine whether

interviewers matched the tone prescribed by each Interrogation Approach. Interrogation Approach had a marginally significant impact on classifications of interrogator demeanor ($\chi^2(6) = 12.09, p = .06$) with participants classifying interrogators as ‘Businesslike’ in the Direct condition ($n = 31$; 48.4%), as ‘Friendly’ in the Scharff Technique condition ($n = 19$; 52.8%), and as ‘Businesslike’ in the File and Dossier condition ($n = 24$; 43.6%) or ‘Bored’ ($n = 4$). Participants had the option to classify interrogator demeanor as not belonging to any of the provided categories (‘Other’), however, these responses were not analyzed further (Direct ($n = 15$; 23.4%); Scharff Technique ($n = 6$; 16.7%); File and Dossier ($n = 8$; 14.5%)).

Participants ($n = 93$) were rated by suspicion probe confederates on a scale of 1 (Not at all Suspicious) to 7 (Highly Suspicious) scale. Participants expressed a low level of suspicion generally ($M = 2.49, SD = 1.64$), regardless of Interrogation Approach condition ($F(2, 93) = 0.55, p = .58, \eta_p^2 = .02$) or Interrogation Order ($F(3, 93) = 1.67, p = 0.18, \eta_p^2 = .07$). All participants were questioned regarding level of belief as to the study claims during the debriefing phase on a scale ranging from 1 (Not at all Believable) to 10 (Extremely Believable). Specifically, participants were asked how believable the following claims were: a) that a student had made a threatening statement ($M = 5.14, SD = 3.17$); b) that there would be consequences for the student who made the statement ($M = 6.15, SD = 3.17$); and c) that there would be consequences to the participant if the identity of the student who made the threat was not discovered ($M = 3.47, SD = 2.97$). A 4 x 3 between-subjects analysis of variance was used to examine the effect of Interrogation Approach and Interrogation Order on level of believability of the central claims of the study. These ratings did not differ as a function of Interrogation Approach

(a: $F(2,159) = 0.28, p = .75, \eta_p^2 = .004$; b: $F(2,159) = 0.70, p = .50; \eta_p^2 = .01$; c: $F(2,159) = 3.63, p = .03, \eta_p^2 = .05$) or as a function of Interrogation Order (a: $F(3,159) = 1.12, p = .35, \eta_p^2 = .03$; b: $F(3,159) = 0.48, p = .70, \eta_p^2 = .01$; c: $F(3,159) = 1.74, p = .16, \eta_p^2 = .04$).

Because removing cases of highly suspicious participants had no effect on the outcome of results, highly suspicious participants are not excluded in the following analyses.

Elicitation Outcomes

Difficulty Determining Information Objectives.

On a 1 (Extremely Easy) to 7 (Extremely Difficult) scale, participants generally found it moderately easy to determine the information objectives of the interviewer ($M = 3.18, SD = 1.93$) but the effect of Interrogation Approach was marginally significant ($F(2,153) = 2.90, p = .06, \eta_p^2 = .04$). Post-hoc comparisons indicated that participants in the Direct Approach condition ($M = 3.48, SD = 1.85$) reported significantly more difficulty than participants in the Scharff Technique condition ($M = 2.34, SD = 1.53, p = .02$), but not participants in the File and Dossier Approach condition ($M = 3.36, SD = 2.11, p = .94$). Participants in the Scharff Technique condition found it significantly easier to determine interrogator information objectives than participants in the File and Dossier Approach condition ($p = .047$). There was no effect of Interrogation Order ($F(3,154) = 0.36, p = .78, \eta_p^2 = .01$) and no interaction between Interrogation Approach and Interrogation Order ($F(6,154) = 1.00, p = .43, \eta_p^2 = .05$).

Interrogator knowledge. The remaining sections of this chapter are based on data obtained from post-interrogation checklists and scored interrogation transcripts. Both objective and subjective measures differentiated between background information, event-

relevant information, and total information. For a complete account of all post-interrogation scale ratings, refer to Table 3.

Total details. Interrogation Approach significantly affected the number of details participants perceived the interrogator held prior to the interrogation ($F(2, 159) = 9.29, p < .001, \eta_p^2 = .12$). Participants interviewed using the Direct Approach ($M = 3.26, SD = 3.62$) did not differ from participants interrogated using the File and Dossier Approach ($M = 5.76, SD = 4.52, p = .33$). However, participants interrogated using the Scharff Technique ($M = 7.93, SD = 5.87$) perceived interrogators to hold more total information prior to the interrogation when compared to both Direct Approach ($p < .001$) and File and Dossier Approach participants ($p < .001$). There was no significant effect of Interrogation Order ($F(3, 159) = 0.14, p = .93, \eta_p^2 = .03$) and no interaction between Interrogation Approach and Interrogation Order ($F(6, 159) = 1.75, p = .11, \eta_p^2 = .07$).

Event-relevant details. Interrogation Approach significantly affected the number of Event-Relevant details participants believed the interrogator held prior to the interrogation ($F(2, 159) = 13.73, p < .001, \eta_p^2 = .17$). As with total details, participants interrogated using a Direct Approach ($M = 1.29, SD = 1.86$) did not differ from participants interrogated using the File and Dossier Approach ($M = 2.18, SD = 2.13, p = 1.00$). However, participants interrogated using the Scharff Technique ($M = 4.10, SD = 3.50$) believed the interrogator held significantly more Event-Relevant details prior to the interrogation compared to participants interrogated using the Direct Approach and the File and Dossier Approach ($ps < .001$). There was no effect of Interrogation Order ($F(3,$

159) = 0.11, $p = .96$, $\eta_p^2 = .002$). There was a no interaction between Interrogation Approach and Interrogation Order ($F(6, 159) = 1.67$, $p = .13$, $\eta_p^2 = .06$).

Subjective Information Contribution

For the subjective detail contribution checklist, the proportion of total details (i.e., summation of background and event-relevant details) marked by participants, and of event-relevant details selected (location of the event), were analyzed, representing the “subjective” measure of information contribution. These measures were analyzed using 3 x 4 analyses of variance. Means and standard deviations for subjective estimates of interrogation information contribution and objective contribution measures are listed in Table 4.

Total details. Interrogation Approach had no impact on the total number of details participants estimated that they had given during the interrogation ($F(2,159) = 1.29$, $p = .28$, $\eta_p^2 = .02$). There was no effect of Interrogation Order ($F(3,159) = 0.16$, $p = .92$, $\eta_p^2 = .004$) and no interaction between Interrogation Approach and Interrogation Order ($F(6,159) = 0.92$, $p = .48$, $\eta_p^2 = .04$).

Event-relevant details. Interrogation Approach did not significantly influence the number of event-relevant details participants believed they gave during the interrogation ($F(2,159) = 2.03$, $p = .14$, $\eta_p^2 = .03$). There was no effect of Interrogation Order ($F(3, 159) = .03$, $p = .99$, $\eta_p^2 = .001$) on estimates and no interaction between Interrogation Approach and Interrogation Order ($F(6,159) = 0.99$, $p = .44$, $\eta_p^2 = .04$).

Source Disclosures

Scored interview transcripts were used to examine the number of actual details participants gave during the interrogation and as a basis for assessing the accuracy of participant's estimates of their own disclosures.

Objective information contribution

Total details were assessed via scoring of interrogation transcripts and using a 3 x 4 between-subjects analysis of variance. Again, I distinguish between total details given overall (background details plus event-relevant details) and details specific to the event (event-relevant details).

Total details. Across conditions, sources gave an average of 1.06 details overall ($SD = 1.71$). Interrogation Approach had a significant effect on the total number of details participants gave during the interrogation ($F(2, 157) = 9.15, p < .001, \eta_p^2 = .12$) (see Table 4). Participants interrogated using the Scharff Technique gave significantly more information overall than participants in both the Direct ($p < .001$) and File and Dossier Approach conditions ($p = .003$). Participants in the File and Dossier Approach and Direct Approach conditions did not differ in the number of total details they gave ($p = 1.00$). The effect of Interrogation Order was not significant ($F(3, 157) = 0.51, p = .68, \eta_p^2 = .012$). There was no interaction between Interrogation Approach and Interrogation Order ($F(6, 157) = 1.04, p = .40, \eta_p^2 = .05$).

Event-relevant details. Participants gave an average of 0.71 event-relevant details across conditions ($SD = 1.71$). Interrogation Approach had a significant effect on the number of event-relevant details participants gave ($F(2, 157) = 6.61, p = .002, \eta_p^2 =$

.09). Participant-sources in the Scharff Technique Interrogation Approach condition gave significantly more event-relevant details than participants in the Direct ($p < .001$) and File and Dossier Approach conditions ($p = .001$) conditions, which did not differ from one another ($p = 1.00$). There was no effect of Interrogation Order ($F(3, 157) = 0.54, p = .65, \eta_p^2 = .01$). Additionally, there was no interaction between Interrogation Order and Interrogation Approach ($F(6, 157) = 0.84, p = .54, \eta_p^2 = .04$).

Subjective vs Objective Information Contribution

A series of mixed effects analyses of variance were run in order to examine the accuracy of participant estimates of their own information contribution (i.e., from the checklist) by comparing participants' subjective estimates of their own disclosures to the objective (i.e., scored via interrogation transcripts) measures. Interrogation Approach and Interrogation Order were used as between-subjects variables while participant estimates (checklist) and scored (objective) detail counts were compared as a within-subjects variable (Estimate Accuracy).

Total details. Participants generally were inaccurate in the estimates they gave for their own information contribution ($F(1, 144) = 26.87, p < .001, \eta_p^2 = .16$). Overall, participants estimated that they had given more details in total ($M = 2.77, SD = 3.49$) than they actually had ($M = 1.04, SD = 1.71$). There was no interaction between Estimate Accuracy and Interrogation Approach ($F(2, 144) = 0.90, p = .41, \eta_p^2 = .01$) or between Estimate Accuracy and Interrogation Order ($F(3, 144) = 0.19, p = 0.90, \eta_p^2 = .004$). The three-way interaction between Estimate Accuracy, Interrogation Order, and Interrogation Approach was also non-significant ($F(6, 144) = 0.96, p = .47, \eta_p^2 = .04$) There was a main

effect of Interrogation Approach ($F(2, 144) = 3.77, p = .02, \eta_p^2 = .06$). Specifically, means were higher for participants interrogated using the Scharff technique compared to participants in the File and Dossier Approach ($p = .05$) and the Direct Approach condition ($p = .07$), although this effect was marginal. Participants who were interrogated using the File and Dossier Approach performed similarly when compared to those in the Direct Approach condition ($p = 1.00$). There was no main effect of Interrogation Order ($F(3, 144) = .44, p = .73, \eta_p^2 = .01$) and no interaction between Interrogation Order and Interrogation Approach ($F(6, 144) = .73, p = .62, \eta_p^2 = .03$).

Event-relevant details. Analysis of the accuracy of participants' event-relevant information contribution estimation via mixed model analysis of variance suggested that participants, again, overestimated their information contribution ($F(1, 144) = 6.22, p = .01, \eta_p^2 = .04$). There was no interaction between Interrogation Approach and Estimate Accuracy ($F(2, 144) = 0.56, p = .57, \eta_p^2 = .01$) nor was there a significant interaction between Estimate Accuracy and Interrogation Order ($F(3, 144) = 0.03, p = .99, \eta_p^2 = .001$). The three-way interaction between Estimate Accuracy, Interrogation Order, and Interrogation Approach was also nonsignificant ($F(6, 144) = 0.50, p = .81, \eta_p^2 = .02$). There were no main effects of Interrogation Approach ($F(2, 144) = 2.51, p = .09, \eta_p^2 = .03$) or Interrogation Order ($F(3, 144) = 0.80, p = 0.50, \eta_p^2 = .02$). The interaction between the two was also not significant ($F(3, 144) = .64, p = .71, \eta_p^2 = .03$).

New Details

Details not included in the Scharff Technique interrogation script and target details presented in the confirmation/disconfirmation statements were considered “new” details. New details were analyzed using a 3 x 4 analysis of variance.

Total number of new details. Across conditions, participants gave a mean of 0.83 new details ($SD = 1.44$) overall. Interrogation Approach had a significant effect on the elicitation of new details in total ($F(2, 157) = 7.50, p = .001, \eta_p^2 = .10$). Participants interrogated using the Scharff Technique ($M = 1.68, SD = 1.53$) gave significantly more new details in total than participants interrogated using the Direct Approach ($M = 0.55, SD = 1.37, p < .001$) and File and Dossier Approach ($M = .60, SD = 1.26, p = .001$). Participants in the Direct and File and Dossier Approach conditions did not differ in the total number of new details they gave ($p = 1.00$). Interrogation Order had no effect on the elicitation of new details, overall, ($F(3, 157) = 0.90, p = .44, \eta_p^2 = .02$) and there was no interaction between Interrogation Approach and Interrogation Order ($F(6, 157) = 1.19, p = .32, \eta_p^2 = .05$).

New event-relevant details. Across conditions, participants gave an average of 0.68 new event-relevant details ($SD = 1.24$). Interrogation Approach had a significant effect on the number of new event-relevant details elicited from sources ($F(2, 157) = 10.38, p < .001, \eta_p^2 = .14$). Participants interrogated using the Scharff Technique ($M = 1.50, SD = 1.31$) gave significantly more new event-relevant information than sources interrogated using the Direct Approach ($M = 0.42, SD = 1.12, p < .001$) condition and File and Dossier Approach conditions ($M = 0.44, SD = 1.08, p < .001$). However, sources interrogated using the Direct Approach and File and Dossier Approach did not differ in

the number of new event-relevant details they provided ($p = 1.00$). There was no effect of Interrogation Order ($F(3, 157) = 0.65, p = .58, \eta_p^2 = .02$) on the number of new event-relevant details elicited, nor was there an interaction between Interrogation Approach and Interrogation Order ($F(6, 157) = 1.11, p = .36, \eta_p^2 = .05$).

Deception

Only 7.10% of participants directly reported lying at some point during the interview ($n = 11$) and only 2.00% of participants ($n = 3$) admitted to directly changing details such as the location of the event. In contrast, over a quarter of participants reported withholding or purposefully leaving out information ($n = 43$; 26.70%) and 24 (15.29%) participants reported that they had misled the interrogator by means other than fabricating or leaving out information. The overall rate of self-reported deception (fabrications plus withholding) did not differ as a function of Interrogation Approach ($\chi^2(2) = 2.32, p = .31$). Participants were deceptive at similar rates across the Direct Approach ($n = 17$; 25.37%), Scharff Technique ($n = 13$; 31.71%) and File and Dossier conditions ($n = 21$; 38.18%).

V. DISCUSSION

The current study tested the efficacy of real-world intelligence collection approaches by creating an entirely novel and highly psychologically realistic paradigm that mimics many of the components inherent to the human intelligence collection context. The current study also extended previous research by moving away from realistic paradigms which are solely applicable to student populations and based in cheating behavior. I predicted that both the Scharff Technique and the File and Dossier approach would result in more new information compared to the Direct Approach

interrogation (Hypothesis 1). This hypothesis was partially supported. While sources interrogated using the Scharff technique gave more new information overall and more new information specific to the event than those interrogated using the Direct Approach, the File and Dossier Approach did not differ from the Direct Approach. Participants interrogated using the File and Dossier Approach, however, were expected to outperform the Scharff Technique and Direct Approach interrogations in the elicitation of total overall information (Hypothesis 2). This hypothesis was also not supported. Again, a similar trend emerged wherein sources interrogated using the Scharff technique provided more information overall, and more information specific to the event compared to both participants interrogated with the Direct and File and Dossier Approaches. In terms of conversational norms and perspective-taking, the Scharff technique, and other futurity-based approaches, may be most effective when illusion-building leads sources to overestimate interrogator knowledge. In this case, sources must share a reciprocal amount of evidence-based information that parallels the quantity and quality of interrogator utterances (Grice, 1975). Given that participants in the current study also experienced a realistic negative event, it is also quite likely that many participants experienced negative affect and were therefore more likely to adhere to all conversational maxims (Koch, Forgas, & Matovic, 2013).

Based on previous research (e.g., Oleszkiewicz et al., 2017) and similarities between the Scharff Technique and File and Dossier Approach, participants in these conditions were expected to perceive the interrogator to be more knowledgeable prior to the interrogation in comparison to those interrogated using the Direct Approach (Hypothesis 3). This hypothesis was partially supported. Although participants

interrogated using the Scharff Technique estimated that the interrogator held more information than participants interrogated using the Direct approach prior to their contributing information themselves, participants in the File and Dossier Approach did not differ at all from those in the Direct Approach condition (and were seen as less knowledgeable than those in the Scharff condition). Although participants interrogated using the Scharff Technique estimated that the interrogator held more information prior to their contributing information themselves, participants in the File and Dossier Approach did not perceive the interrogator as more knowledgeable in comparison to Scharff Technique participants. The File and Dossier Approach sources did not differ at all from those in the Direct Approach condition.

The File and Dossier Approach operates under the premise that the interrogator already possesses all known information through documentation whereas the Scharff Technique relies on extensive recitation of both background and event information. However, while both approaches operate under similar premises, they fundamentally differ in the way they are delivered. The File and Dossier Approach requires the interrogator to establish their knowledgeability by initially asking questions for which the answer is known in order to establish truthfulness and build the illusion of knowing-it-all. Participants did not directly report on their perceptions of the interrogation approaches but it may be that another of the premises the Scharff Technique is built upon- that use of direct questions cause sources to perceive gaps in interrogator knowledge- is correct. Evidence for this can be seen in the fact that the Direct Approach and the File and Dossier Approach were virtually indistinguishable in this measure despite the somewhat extensive illusion-building phase of the latter. In fact, the two approaches performed

similarly on nearly every measure. This could suggest that the avoidance of direct questions in the Scharff technique is a key aspect of its success.

Participants were predicted to underestimate their own information contributions to the interrogation when interviewed using the Scharff Technique while participants in the Direct and File and Dossier Approach conditions should not (Hypothesis 4). This hypothesis was not confirmed. While Interrogation Approach had no effect on the accuracy of participant's estimates, participants generally performed poorly overall in terms of accurately estimating their own information contribution. In role-playing studies on the Scharff technique, participants consistently have been found to underestimate their own contribution whereas in the current study, no interrogation approach moderated participants' tendency to over/underestimate (everyone overestimated to a similar extent). Future research should examine the degree to which different approaches affect the ability to accurately recall the source of interrogative utterances (i.e., interrogator or source) to determine why the Scharff Technique approach caused sources to underestimate their contributions in role-playing (but not realistic) contexts. In addition, it may be worthwhile to examine the role that understanding of one's own cognitive processes, and confidence in that assessment of understanding (i.e., metacognition), plays in information management decisions as a function of interrogation approach.

As is theorized in previous research (e.g., Oleskiewicz et al., 2019), the lack of questions inherent in the Scharff Technique should also cause participants to report greater difficulty in determining interrogator information objectives compared to the two question-based approaches- the Direct Approach and the File and Dossier Approach (Hypothesis 5). This hypothesis was not supported. In contrast to previous research,

participants in the Scharff condition reported significantly *greater* ease in determining what information the interrogator sought in comparison to both the Direct and File and Dossier Approach conditions. It may be that the sheer volume of information shared by Scharff Technique interrogators led sources to believe that the interrogator already held most, if not all, relevant information and therefore was not truly seeking any information at all. Rather, they may have perceived that the purpose of questioning was simply to ensure that all participants were spoken to as a matter of thoroughness or formality. The apparent knowledgeability of the interrogator however, still lead participants interrogated with the Scharff Technique to contribute more new information than sources interrogated with the File and Dossier or Direct Approaches. It may be that, as previously stated (and as proposed through the premises underlying the Scharff Technique), the appearance of knowledgeability may lead sources to be less reluctant to share or confirm information they assume is already ‘known’ (though they may continue to withhold information that does not appear to be ‘known’ to the interrogator) particularly when participant’s believe the interrogator’s information objectives are obvious.

Finally, because isolation/separation are customarily used to increase the sense of anxiety felt by the source as they wait to find out what the interrogator will ask, I predicted that participants who are interrogated later (i.e., after a longer delay) should perceive the interrogator as more knowledgeable because they will have already spoken to other participants. Sources should also feel more pressure to appear cooperative and contribute more information as a result (Hypothesis 6). This hypothesis was not supported; there were no differences in contribution as a function of interrogation order/time spent in isolation. Many interrogation techniques, including those used by

police, are meant to either increase or decrease the anxiety felt by the suspect or source. The current study did not account for self-reported levels of anxiety or pressure but instead examined information contribution. Future research examining both HUMINT and criminal interrogation approaches should use measures of perceived pressure to provide information and self-reported anxiety in order to determine whether these are truly mechanisms through which information-management and contribution are impacted.

The participants in the current study tended to refrain from deception, at least in terms of self-report data, and instead often expressed a desire to be helpful and honest. While it may have been true that participants who were more hesitant to share information felt more comfortable doing so when they believed the interrogator already held that information, a relatively large number of participants did report withholding. Future studies using realistic paradigms might investigate exactly which details are withheld and why participants choose to withhold certain types of information over others. It may be that the lack of concrete information on the event' (e.g., the confederate never directly stated that they had plans to attend an event or protest) created confusion; participants were suddenly and unexpectedly interrupted and told that a serious threat had been made. It may be that the lack of information disclosure was due to this confusion, rather than an intent to be intentionally deceptive. The use of open-ended questions ("Is there anything you can tell me?") in the Direct and File and Dossier conditions may have exacerbated the confusion as there was little cueing the participants to what they should report. Essentially, participants were unable to anticipate that they would be asked to recall information on a single participant's (the confederate) statements or behavior

because they were not informed as to the real purpose of the study. They may therefore have had difficulty sifting through the large amount of information generated by up to four additional participants quickly enough without knowing what the threat was comprised of ahead of time. In fact, during debriefing many participants stated that they did not understand who or what they were being questioned about until after the interrogation had concluded. The difference in interrogation approaches could have differentially affected the timing and efficiency of the retrieval cues participants used to recall confederate utterances. In other words, the extensive amount of information provided in the Scharff interrogation script may have served as a mnemonic or memory aid which helped participants more easily access relevant information. It is highly possible that the Scharff interrogators statements served as cues for determining what information was relevant and what was irrelevant, as long as participants were paying close attention to the statements of the confederate during the interrogation. For participants who were not paying full attention during the group activities, the Scharff interrogator's statements may have served to remind participants of certain confederate statements which they would not otherwise have remembered (particularly if these pieces of information were weakly processed/encoded to begin with).

Regardless, if increasing the chances of obtaining new rather than known/repeated information is of primary importance to the interrogation, the Scharff Technique is certainly likely to be effective. However, if the goal of the interrogation is to reduce source's ability to accurately estimate what, and how much, they have said, it may not matter what approach is used. It is important to understand why sources tend to consistently underestimate their information contributions in role-playing paradigm

studies when interrogated using the Scharff Technique but generally overestimated across conditions in the current study. Because sources were supplied with more information, and more specific information in previous tests of the Scharff technique, and were specifically instructed to memorize that information, it may be that the Scharff Technique is more effective with highly knowledgeable sources but less successful with less knowledgeable sources or naïve sources who do not understand the value of the information they possess. Considering the cognitive demand imposed on interrogators who must memorize an extensive amount of information in order to build and maintain the illusion of knowing-it-all while ensuring that important strategic information is not given away is likely very high, it may be more efficient to use more direct methods to increase information gain rather than the Scharff Technique in some situations.

Limitations of the Current Study. The current study was highly complicated in practice. First, it is quite difficult to maintain consistency across scripts with naturalistic paradigms because it is impossible to predict whether participants were paying attention and will therefore be able to connect interrogator questions to the confederate script or the critical events. In addition, naturalistic paradigms, even with scripted interrogations, cannot predict questions that participants may ask the interrogator and this leads to variability in both interrogator utterances and participant responses. In addition, differences among groups were not accounted for statistically and it is therefore unknown what contribution group level differences made to the results obtained in the current study.

The order of the target details sought by the interrogator were not counterbalanced. It may be that specific keywords served as a trigger or cue for

participants to frame their responses within. If participants had first been asked whether any of their co-members were involved in activism (the confederate made several statements which framed them as an activist) prior to being asked about an event they may have more easily identified the person of interest and therefore would have been more successful in remembering and reporting sought after information as a result. Alternatively, if such keywords had been used in the File and Dossier or Direct Approach interrogations, participants may have been better able to contribute information. For example, the first confirmation statement in the Scharff Technique interrogation specifically mentions the location of the confederate's "out of town" location- Everglades National Park. However, the Direct Approach and File and Dossier Approach questions were phrased in a non-leading manner and did not give specific keywords within the question prompts. Rather, participants were simply asked if they knew of a potential location where an event would occur, based on what the other participants (which included the confederate) had said during the session. Future research should examine the presentation order of the target details and question specificity within approaches to explore this possibility. Future research should also vary the accuracy of the claims used in Scharff Technique approach. We solely provided claims that were accurate "guesses" (i.e., confirmation statements were used, but disconfirmation statements were not) and participants may have simply assumed them to be true. Alternatively, the confirmation statements provided by the interrogator may have served, again, as cues for participants who had forgotten the information given by the confederate or who were unable to make the connection between the threat the interrogator informed them of and the confederate's statements. There is some evidence from previous research on the Scharff Technique, that

this may occur. When confirmation-only Scharff protocols were used (Oleszkiewicz, Granhag, & Kleinman, 2014), participants contributed more new information than those who were questioned using a Scharff protocol containing a mix of confirmation and disconfirmation (i.e., accurate and inaccurate) statements. The presentation of confirmation-only claims also has been found to lead to greater ease of determining interrogator information objectives while participants exposed to disconfirmation-only Scharff Technique interrogations had greater difficulty (May, Granhag, & Oleszkiewicz, 2014).

The current study differs from previous research on the Scharff Technique (e.g., Granhag et al., 2019) in several ways. Many of the previous studies on the Scharff technique (e.g., May, Granhag, & Oleszkiewicz, 2014; May & Granhag, 2016) use phone interviews while the current study used in-person interrogations. The difference in mode of interaction may have affected results in that in-person interrogations provide more cues (e.g. facial expressions) for sources to use in order to determine interrogator information objectives and assess interrogator knowledge. It may be that the added presence of body language cues and other visual behaviors allow participants to more accurately assess the various elicitation strategies of the interrogator. In addition, previous research has used trained actors to serve as interrogators (e.g., Granhag et al., 2016; Oleszkiewicz et al., 2017). The current study utilized team members who were inexperienced in acting but who delivered long, nuanced scripts. It may be that the ability of trained actors to thoroughly memorize scripts and deliver them with the correct tone was not carried over to the current study where scripts were delivered by novices who may have had difficulty matching the tone prescribed by the Army Field Manual (2-

22.3). Similarly, using novice actors as confederates may have led to a discrepancy in tone where the confederate was not able to adequately convey passion or anger to sources in regard to key script details, therefore leading participants to miss or discount the information both during the session and during the interrogation. Although many participants correctly identified the prescribed tone of the interrogation approach they were exposed to, this concern is somewhat justified as a substantial number of participants did not identify the tone that was intended.

Debriefing. Although debriefing comments provided by participants were not systematically analyzed, anecdotal data based on participant statements suggests several important points of consideration. First, it is necessary to account for the fact that many individuals will withhold information regardless of interrogation approach. For example, a number of participants stated that they would never “snitch” on (or “rat out”) another individual no matter who that individual was. Another point of consideration is the increasing awareness surrounding both environmental and animal rights. With growing discussion of the threat of climate change in recent years, many individuals expressed similar positions to the confederate regarding environmental issues. It may be that this cultural shift led to a greater sense of comradery and liking for the confederate. This is arguably desirable because it lends greater psychological realism to the paradigm, solidarity among group members holding similar views may decrease the likelihood that environmentally conscious participants would give information on the confederate. This is supported by anecdotal debrief responses in which environmentally conscious participants expressed disbelief that the confederate would be involved in something illegal simply because they strongly supported such issues. The “event” used in the study

was described as a protest which may involve illegal behavior such as the destruction of property. Among participants involved in activism, or those generally supportive of environmental activism, there may have been disbelief that the confederate's actions would be unlawful. In fact, a number of participants stated that they did not believe the confederate would act in a criminal manner because protests, in and of themselves, are not illegal. In this vein, an increase in environmental consciousness may have muddled other participants' perceptions of the person of interest (confederate) during the interrogation. That is, due to the need to create a naturalistic confederate script that would not be obvious or cause suspicion among participants, the confederate's statements may not have been salient enough for participants to differentiate between the confederate as the critical person of interest as opposed to actual participants who expressed similar views to the confederate during the group discussion. Participants may have had more difficulty in remembering what was said over the course of the session by the various group members, if similar views were held by many, and they were therefore unable to isolate the targeted details (e.g., date of event) during interrogation as a result.

A final consideration for future research is population. Undergraduate students, particularly those studying psychology, are apt to be more suspicious than the average individual simply by virtue of having learned about deception in research. Students are also routinely required to participate in research for their classes and may be intimately familiar with the process as a result. As previously discussed, however, the majority of research on interrogation utilizes an undergraduate sample who typically has little criminal experience and who tend not to display radical or extreme ideologies. In order to more closely replicate real-world conditions in the study of interrogation it is advisable to

employ community samples who do have legal or criminal experience (e.g., prior arrests) and who are less likely to be informed regarding the use of confederates and deception in research; this should result in more naturalistic behavior. This is something that cannot be done using the usual cheating paradigms. As such, the current procedures provide a significant foundation for future study.

Conclusion

There is no empirical means, as of yet, of convincing entirely uncooperative individuals to contribute information during interrogation. However, it is clear that all interrogation approaches have some effect on semi-cooperative and cooperative individuals. The current study, in combination with previous research, provides evidence that certain techniques do in fact perform specific functions more efficiently. Based on the results described here, it does appear that the Scharff Technique achieved many of its intended goals when cooperative and semi-cooperative sources were questioned (e.g., increase in perceived interrogator knowledgeability; greater ‘new’ information contribution). Ultimately, the approach used during an interrogation should depend on both the level of cooperation of the source and the goal of the interrogation. If the goal of the interrogation is to create an illusion of omniscience while eliciting new information, the Scharff Technique may be a viable option. However, other approaches may be more optimal if, for example, hiding the interrogator’s information objectives is unnecessary or the interrogator does not have enough information to successfully engage in illusion-building. The current study provides yet another procedure in which to study the elicitation of information from sources of human intelligence. However, this study also resulted in replication of the findings of previous research and therefore provides

important evidence for convergent validity. It is vital in the case of elicitation and HUMINT interrogation research to use a variety of methods to study information management behavior. In fact, it may be arguably more important in the context of interrogation research to use highly realistic paradigms because of the highly consequential occurrence of mass terror attacks and organized crime. Overall, the current study suggests that the Scharff Technique may, in fact, be highly effective compared to other approaches, in such situations.

References

- Alison, L.A. Alison, E., Noone, G., Elntib, S., Waring, S., & Christiansen, P. (2013). Why tough tactics fail and rapport gets results: observing rapport-based interpersonal techniques(ORBIT) to generate useful information from terrorists. *Psychology, Public Policy, and Law*, 19, 411-431. DOI: 10.1037/a0034564.
- Alison, L.A. Alison, E., Noone, G., Elntib, S., Waring, S., & Christiansen, P. (2014). Whatever you say, say nothing: Individual differences in counter interrogation tactics amongst a field sample of right wing, AQ inspired and paramilitary terrorists. *Personality and Individual Differences*, 68, 170-175. DOI: 10.1016/j.paid.2014.04.031
- Bartlett, F. C. (1932). Remembering: A study in experimental and social psychology. Cambridge, UK: Cambridge University Press. Retrieved from https://pure.mpg.de/rest/items/item_2273030/component/file_2309291/content
- Blais, A. R., & Weber, E. U. (2006). A domain-specific risk-taking (DOSPERT) scale for adult populations. *Judgment and Decision making*, 1, 33-47. Retrieved from https://pdfs.semanticscholar.org/6ff0/c56b0f948f15b955dd5e5099c48649d29179.pdf?_ga=2.170818336.1670551226.1590125624-1058070456.1590012741
- Borum, R., Gelles, M., & Kleinman, S. (2009). Interview and interrogation: A perspective and update from the USA. In R. Milne, S. Savage, & T. Williamson (Eds.) *International Developments in Investigative Interviewing* (pp 111-128). Cullompton, Devon, England: Willan Publishing. Retrieved from https://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=1537&context=mhlp_facpub
- Brandon, S. E., & Wells, S. (2019). Towards a Theory of Interrogation. *Evidence-based Investigative Interviewing: Applying Cognitive Principles*, 134.
- Brewer, W. F., & Treyens, J. C. (1981). Role of schemata in memory for places. *Cognitive Psychology*, 13(2), 207-230. [https://doi.org/10.1016/0010-0285\(81\)90008-6](https://doi.org/10.1016/0010-0285(81)90008-6)
- Buss, A. H., & Durkee, A. (1957). An inventory for assessing different kinds of hostility. *Journal of Consulting Psychology*, 21(4), 343-349. <https://doi.org/10.1037/h0046900>
- Clemens, F., Granhag, P. A., & Strömwall, L. A. (2011). Eliciting cues to false intent: A new application of strategic interviewing. *Law and Human Behavior*, 35(6), 512-522. DOI 10.1007/s10979-010-9258-9

- Copes, H., Vieraitis, L., & Jochum, J. M. (2007). Bridging the gap between research and practice: How neutralization theory can inform Reid interrogations of identity thieves. *Journal of Criminal Justice Education*, 18(3), 444-459. DOI: 10.1080/10511250701705404
- Drizin, S. A., & Leo, R. A. (2004). The problem of false confessions in the post-DNA world. *North Carolina Law Review*, 82, 891-1004. Retrieved from http://ilab.utep.edu/Drizin_2004_NCLR.pdf
- Evans, J. R., Meissner, C. A., Ross, A. B., Houston, K. A., Russano, M. B., & Horgan, A. J. (2013). Obtaining guilty knowledge in human intelligence interrogations: Comparing accusatorial and information-gathering approaches with a novel experimental paradigm. *Journal of Applied Research in Memory and Cognition*, 2(2), 83-88. <http://dx.doi.org/10.1016/j.jarmac.2013.03.002>
- Evans, J. R., Houston, K. A., Meissner, C. A., Ross, A. B., LaBianca, J. R., Woestehoff, S. A., & Kleinman, S. M. (2014). Empirical evaluation of Intelligence-gathering interrogation techniques from the United States army field manual. *Applied Cognitive Psychology*, 28, 867-875. doi: 10.1002/acp.3065. DOI:10.1002/acp.3065
- Evans, J. R., Shaffer, S. A., & Walsh, D. (2019). Interpreters in investigative contexts. In Bull, R. and Blandón-Gitlin (Eds), *The Routledge International Handbook of Legal and Investigative Psychology*. 133-138. Routledge, New York, NY.
- Farber, I. E., Harlow, H. F., & West, L. J. (1957). Brainwashing, conditioning, and DDD (debility, dependency, and dread). *Sociometry*, 20(4), 271-285. <https://www.jstor.org/stable/2785980>
- Fisher, R. P., & Geiselman, R. E. (1992). Memory enhancing techniques for investigative interviewing: The cognitive interview. Charles C Thomas Publisher.
- Fiske, S.T., & Taylor, E.T. (1991). Social cognition. New York: McGraw-Hill
- Galinsky, A. D., Maddux, W. W., Gilin, D., & White, J. B. (2008). Why it pays to get inside the head of your opponent: The differential effects of perspective taking and empathy in negotiations. *Psychological Science*, 19, 378-384. doi:10.1111/j.1467-9280.2008.02096.x
- Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment*, 4(1), 26-42. Retrieved from https://projects.ori.org/lrg/PDFs_papers/Goldberg.Big-Five-Markers-Psych.Assess.1992.pdf

- Granhag, P. A., & Hartwig, M. (2008). A new theoretical perspective on deception detection: On the psychology of instrumental mind-reading. *Psychology, Crime & Law*, 14(3), 189-200. DOI: 10.1080/10683160701645181
- Granhag, P. A., & Knieps, M. (2011). Episodic future thought: Illuminating the trademarks of forming true and false intentions. *Applied Cognitive Psychology*, 25(2), 274-280. DOI: 10.1002/acp.1674
- Granhag, P. A., Mac Giolla, E., Strömwall, L. A., & Rangmar, J. (2013). Counter-interrogation strategies among small cells of suspects. *Psychiatry, Psychology and Law*, 20(5), 705-712. DOI: 10.1080/13218719.2012.729021
- Granhag, P. A., Montecinos, S. C., & Oleszkiewicz, S. (2015). Eliciting intelligence from sources: The first scientific test of the Scharff technique. *Legal and Criminological Psychology*, 20(1), 96-113. DOI:10.1111/lcrp.12015
- Granhag, P. A., Oleszkiewicz, S., Strömwall, L. A., & Kleinman, S. M. (2015). Eliciting intelligence with the Scharff technique: Interviewing more and less cooperative and capable sources. *Psychology, Public Policy, and Law*, 21(1), 100-110. <http://dx.doi.org/10.1037/law0000030>
- Granhag, P. A., Rangmar, J., & Strömwall, L. A. (2015). Small cells of suspects: Eliciting cues to deception by strategic interviewing. *Journal of Investigative Psychology and Offender Profiling*, 12(2), 127-141. DOI: 10.1002/jip.1413
- Granhag, P. A., Vrij, A., & Verschuere, B. (2015). *Detecting deception: Current challenges and cognitive approaches*. John Wiley & Sons.
- Granhag, P. A., Oleszkiewicz, S., Sakrisvold, M. L., & Kleinman, S. M. (2019). The Scharff Technique: training military intelligence officers to elicit information from small cells of sources. *Psychology, Crime & Law*, 1-23. DOI: 10.1080/1068316X.2019.1669600
- Granhag, P. A., Kleinman, S. M., & Oleszkiewicz, S. (2016). The Scharff technique: On how to effectively elicit intelligence from human sources. *International Journal of Intelligence and CounterIntelligence*, 29(1), 132-150. DOI: 10.1080/08850607.2015.1083341
- Grice, H.P. (1975). Logic and conversation. *Speech Acts*, 41-58. Retrieved from <http://cs.brown.edu/courses/csci2951-k/papers/grice75.pdf>
- Hartwig, M., & Bond Jr, C. F. (2014). Lie detection from multiple cues: A meta-analysis. *Applied Cognitive Psychology*, 28(5), 661-676. DOI: 10.1002/acp.3052

- Hartwig, M., Meissner, C. A., & Semel, M. D. (2014). Human intelligence interviewing and interrogation: Assessing the challenges of developing an ethical, evidence-based approach. In *Investigative Interviewing* (pp. 209-228). Springer, New York, NY.
- Houston, K. A., Meissner, C. A., & Evans, J. R. (2014). Psychological processes underlying true and false confessions. In *Investigative interviewing* (pp. 19-34). Springer, New York, NY. DOI 10.1007/978-1-4614-9642-72,
- Kassin, S. M., Leo, R. A., Meissner, C. A., Richman, K. D., Colwell, L. H., Leach, A. M., & La Fon, D. (2007). Police interviewing and interrogation: A self-report survey of police practices and beliefs. *Law and Human Behavior*, 31(4), 381-400. <https://doi.org/10.1007/s10979-006-9073-5>
- Kassin, S. M., Dror, I. E., & Kukucka, J. (2013). The forensic confirmation bias: Problems, perspectives, and proposed solutions. *Journal of Applied Research in Memory and Cognition*, 2(1), 42-52. <http://dx.doi.org/10.1016/j.jarmac.2013.01.001>
- Kassin, S. M., Drizin, S. A., Grisso, T., Gudjonsson, G. H., Leo, R. A., & Redlich, A. D. (2010). Police-induced confessions: Risk factors and recommendations. *Law and Human Behavior*, 34(1), 3-38. <https://doi.org/10.1007/s10979-009-9188-6>
- Koch, A.S., Forgas, J.P., & Matovic, D. (2013). Can negative mood improve your conversation? Affective influences on conforming to Grice's communication norms. *European Journal of Social Psychology*, 3.
- Koriat, A., Goldsmith, M., & Pansky, A. (2000). Toward a psychology of memory accuracy. *Annual Review of Psychology*, 51(1), 481-537. <https://doi.org/10.1146/annurev.psych.51.1.481>
- Krauss, R. M., & Fussell, S. R. (1991). Perspective-taking in communication: Representations of others' knowledge in reference. *Social Cognition*, 9(1), 2-24. doi: 10.1146/8994
- Leo, R. A. (1995). Inside the interrogation room. *Journal of Criminal Law & Criminology*, 86, 266. Retrieved from <http://www.reid.com/pdfs/doj20372075.pdf>
- Luke, T. J., & Granhag, P. A. (2020). The Shift-of-Strategy (SoS) approach: Using evidence strategically to influence suspects' counter-interrogation strategies.
- May, L., Granhag, P.G., & Oleszkiewicz, S. (2014). Eliciting intelligence using the Scharff technique: Closing in on the confirmation/disconfirmation tactic. *Journal*

of Investigative Psychology and Offender Profiling, 11, 136-150. DOI: 10.1002/jip.1412.

- May, L., & Granhag, P. A. (2016). Techniques for eliciting human intelligence: Examining possible order effects of the Scharff tactics. *Psychiatry, Psychology and Law*, 23(2), 275-287. DOI: [10.1080/13218719.2015.1054410](https://doi.org/10.1080/13218719.2015.1054410)
- Oleszkiewicz, S., Granhag, P. A., & Cancino Montecinos, S. (2014). The Scharff-technique: Eliciting intelligence from human sources. *Law and Human Behavior*, 38(5), 478-489. DOI: 10.1037/lhb0000085
- Oleszkiewicz, S., Granhag, P. A., & Kleinman, S. M. (2014). On eliciting intelligence from human sources: Contextualizing the Scharff-technique. *Applied Cognitive Psychology*, 28(6), 898-907. DOI: 10.1002/acp.3073
- Oleszkiewicz, S., Granhag, P.A., & Kleinman, S. M. (2017). Gathering human intelligence via repeated interviewing: Further empirical tests of the Scharff technique. *Psychology, Crime, and Law*, 23, 666-681. DOI: 10.1080/1068316X.2017.1296150
- Redlich, A. D., Silverman, M., Chen, J., & Steiner, H. (2004). The police interrogation of children and adolescents. In *Interrogations, confessions, and entrapment* (pp. 107-125). Springer, Boston, MA.
- Redlich, A. D., Kelly, C. E., & Miller, J. C. (2014). The who, what, and why of human intelligence gathering: Self-reported measures of interrogation methods. *Applied Cognitive Psychology*, 28, 817-828. DOI: 10.1002/acp.3040.
- Romero, M. (1985). A comparison between strategies used on prisoners of war and battered wives. *Sex Roles*, 13(9-10), 537-547. <https://link.springer.com/content/pdf/10.1007/BF00287760.pdf>
- Roxbørg, C. (2000). Cognitive load and perspective-taking: applying the automatic-controlled distinction to verbal communication. *European Journal of Social Psychology*, 30(3), 429-445. Retrieved from [https://doi.org/10.1002/\(SICI\)1099-0992\(200005/06\)30:3<429::AID-EJSP3>3.0.CO;2-V](https://doi.org/10.1002/(SICI)1099-0992(200005/06)30:3<429::AID-EJSP3>3.0.CO;2-V)
- Russano, M.B., Meissner, C.A., Narchet, F.M. & Kassin, S.M.(2005). Investigating true and false confessions within a novel experimental paradigm. *Psychological Science*, 16, 481-486. Retrieved from https://journals.sagepub.com/doi/pdf/10.1111/j.0956-7976.2005.01560.x?casa_token=Hj9x5LXbHxIAAAAA:opUuuU9DB7jprukGcdg9dYmccFGTZkofejPWuVdh9hGwAI5cJPWzVmxKKeGXQs0ToAuiKaL_Iuo76CU

- Russano, M. B., Narchet, F. M., & Kleinman, S. M. (2014). Analysts, interpreters, and intelligence interrogations: Perceptions and insights. *Applied Cognitive Psychology*, 28(6), 829-846. DOI: 10.1002/acp.3070
- Shaffer, S. A., & Evans, J. R. (2018). Interpreters in law enforcement contexts: Practices and experiences according to investigators. *Applied Cognitive Psychology*, 32(2), 150-162. DOI: 10.1002/acp.3388
- Sooniste, T., Granhag, P. A., Strömwall, L. A., & Vrij, A. (2016). Discriminating between true and false intent among small cells of suspects. *Legal and Criminological Psychology*, 21(2), 344-357. DOI:10.1111/lcrp.12063
- Telep, C. W. (2013). *Moving Forward With Evidence-Based Policing: What Should Police Be Doing and Can We Get Them to Do It?*. George Mason University. <https://hdl.handle.net/1920/8217>
- Toliver, R. (1997). *The interrogator*. Pennsylvania: Schiffer Publishing.
- United States Department of the Army. (2006). Human intelligence collector operations. (Field Manual 2-22.3) Washington, DC: Author.
- United States Department of Justice, Office of the Inspector General. (2006). Review of the FBI's Handling of the Brandon Mayfield Case. *Office of the Inspector General, Oversight and Review Division, US Department of Justice*, 1-330. Retrieved from
- Vrij, A. (2008). *Detecting lies and deceit: Pitfalls and opportunities* (2nd ed.). Chichester, UK: John Wiley & Sons.
- Vrij, A., Fisher, R., Mann, S., & Leal, S. (2008). A cognitive load approach to lie detection. *Journal of Investigative Psychology and Offender Profiling*, 5, 39-43. DOI: 10.1002/jip.82
- Vrij, A., Granhag, P. A., Mann, S., & Leal, S. (2011). Lying about flying: The first experiment to detect false intent. *Psychology, Crime & Law*, 17, 611-620. DOI: 10.1080/10683160903418213
- Vrij, A., Leal, S., Mann, S. A., & Granhag, P. A. (2011). A comparison between lying about intentions and past activities: Verbal cues and detection accuracy. *Applied Cognitive Psychology*, 25, 212-218. DOI: 10.1002/acp.1665
- Wachi, T., Watanabe, K., Yokota, K., Otsuka, Y., & Lamb, M. E. (2016). The relationship between police officers' personalities and interviewing styles. *Personality and Individual Differences*, 97, 151-156. <http://dx.doi.org/10.1016/j.paid.2016.03.031>

Weber, E. U., Blais, A. R., & Betz, N. E. (2002). A domain-specific risk-attitude scale: Measuring risk perceptions and risk behaviors. *Journal of Behavioral Decision Making*, 15(4), 263-290. DOI: 10.1002/bdm.414

Zhou, H., Majka, E. A., & Epley, N. (2017). Inferring perspective versus getting perspective: Underestimating the value of being in another person's shoes. *Psychological Science*, 28, 482–493. DOI: 10.1177/0956797616687124

Table 1.

Sample size (n) per condition by variable

n	
<i>Variable</i>	
Interrogation Approach	
Direct	67
Scharff Technique	39
File and Dossier	55
Interrogation Order	
First	85
Second	48
Third	19
Fourth	9

Number of Group

Members (including

Confederate)

Two 38

Three 58

Four 29

Five 36

Total N 161

Table 2.

Participant ratings (M(SD)) for the group discussion and group membership on a scale from 1 (Strongly Disagree) to 7 (Strongly Agree).

	<u>Min</u>	<u>Max</u>	<u>M(SD)</u>	<u>Median</u>
<i>Variable</i>				
The other members of my group were interesting	1	7	6.39(.99)	7
The other members of my group had important things to say	3	7	6.52(.79)	7
This study has been engaging so far	3	7	6.48(.91)	7
I am motivated to interact with my group and the other group members	2	7	6.52(.87)	7
I like the other members of my group	2	7	6.56(.84)	7
I like the group discussion leader/moderator	1	7	6.53(.95)	7
The group leader/moderator did a good job of leading the discussion	1	7	6.52(.99)	7

The group discussion was interesting	2	7	6.54(.94)	7
My group members and I agreed on many of the discussion topics	2	7	6.19(1.18)	7

Table 3.

Overall F-Test and Means(Standard Deviations) for Interrogation-Specific Ratings on a scale of 1 (Extremely) to 7 (Not at all).

Variable	Interrogation Approach									Interrogation Order			
	F(2,155)	p	η_p^2	Direct M(SD)	Scharff Technique M(SD)	File and Dossier M(SD)	F(3,155)	p	η_p^2	First M(SD)	Second M(SD)	Third M(SD)	Fourth M(SD)
<i>*How motivated were you to achieve balance between not sharing too much or too little information during the interview?</i>	2.29	.11	.03	3.83(1.82)	3.22 (1.70)	3.15(1.67)	1.20	.31	.02	3.28(1.76)	3.83(1.77)	3.06(1.59)	3.63(1.92)
<i>How much new information did you feel you gave to the interviewer?</i>	1.08	.34	.02	4.65(2.19)	4.06(2.12)	4.55(2.16)	1.87	.14	.04	4.31(2.22)	4.98(1.98)	3.89(2.14)	4.38(2.50)
<i>How much information did you feel the interviewer had prior to beginning</i>	2.91	.06	.04	3.48(1.90)	2.29(1.78)	3.56(2.04)	.75	.53	.02	3.35(1.96)	2.90(1.92)	3.67(2.25)	3.25(2.05)

<i>the interview?</i>													
<i>How important was the information you gave to the interviewer?</i>	.48	.62	.01	4.14(2.32)	3.81(2.28)	4.24(1.92)	2.26	.08	.05	3.85(2.19)	4.65(2.08)	3.50(2.10)	4.63(2.20)
<i>How honest were you during the interview?</i>	.49	.62	.01	1.80(1.67)	1.56(1.03)	1.45(1.29)	.236	.87	.01	1.58(1.37)	1.69(1.43)	1.61(1.65)	1.63(1.41)
<i>How helpful were you during the interview?</i>	.119	.89	.00	3.63(2.31)	3.54(2.17)	3.60(2.15)	1.37	.25	.03	3.52(2.26)	3.83(2.14)	2.88(2.03)	4.50(2.33)

**Note:* The above scales are reverse coded from 1 (high) to 7 (low) (E.g, 1 (Extremely Motivated) to 7 (Extremely Unmotivated)).

Table 4.

Means and Standard deviations (SD) for participant subjective estimates (checklist) and objective (scored) detail contributions.

		Interrogation Approach			Interrogation Order			
		<u>Direct Approach</u>	<u>Scharff Technique</u>	<u>File and Dossier Approach</u>	<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Fourth</u>
		M(SD)	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)
<i>Variable</i>								
	Estimate of Total Detail Contribution	2.67(3.84)	3.57(3.01).	2.36,(3.33)	3.02(3.43)	2.31(3.61)	2.84(3.47)	2.78(3.80)
	Estimate of Event- Relevant Contribution	1.15(2.16)	1.84(1.80)	0.98(1.97)	1.39(2.19)	1.02(1.94)	1.26(1.73)	1.11(1.62)
	Total Details	.71(1.71)	2.03 1.57)	.80(1.49)	1.26(1.95)	.72 (1.37)	1.16, (1.50)	.78, (1.56)
	Event Details	.45(1.26)	1.49(1.32)	.49(1.22)	.84, (1.47)	.45(1.08)	.79,(1.23)	.67(1.32)
	New Total Details	.55(1.37)	1.68(1.53)	.60(1.26)	1.05(1.62)	.51(1.02)	.84(1.42)	.78(1.56)
	New Event Details	.42(1.12)	1.50(1.31)	.44(1.08)	.80(1.36)	.46(1.01)	.74(1.19)	.67(1.32)

Appendix A- Confederate Script

This is a personality test, it will help us understand how your personality is structured. Please rate how much you agree with each of the following statements.

I am the life of the party.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I feel little concern for others.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I am always prepared.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree

☐ Agree

I get stressed out easily.

☐ Disagree

☐ Slightly Disagree

☐ Neutral

☐ Slightly Agree

☐ Agree

I have a big vocabulary.

☐ Disagree

☐ Slightly Disagree

☐ Neutral

☐ Slightly Agree

☐ Agree

I don't talk a lot.

☐ Disagree

☐ Slightly Disagree

☐ Neutral

☐ Slightly Agree

☐ Agree

I am interested in people.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I leave my belongings around/I am messy

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I am relaxed most of the time.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I have difficulty understanding abstract ideas.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I feel comfortable around people.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I insult people.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I pay attention to details.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I worry about things.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I have a vivid imagination.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I keep in the background.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I sympathize with others' feelings.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I make a mess of things.

- ☐ Disagree
 - ☐ Slightly Disagree
 - ☐ Neutral
 - ☐ Slightly Agree
 - ☐ Agree
-

I seldom feel sad.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I am not interested in abstract ideas.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I start conversations.

- ☐ Disagree
 - ☐ Slightly Disagree
 - ☐ Neutral
 - ☐ Slightly Agree
 - ☐ Agree
-

I am not interested in other people's problems.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I get chores done right away.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I am easily disturbed.

- ☐ Disagree
 - ☐ Slightly Disagree
 - ☐ Neutral
 - ☐ Slightly Agree
 - ☐ Agree
-

I have excellent ideas.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I have little to say.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I have a soft heart.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I often forget to put things back in their proper place.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I get upset easily.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I do not have a good imagination.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I talk to a lot of different people at parties.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I am not really interested in others.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I like order.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I change my mood a lot.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I am quick to understand things.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I don't like to draw attention to myself.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I take time out for others.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I shirk (avoid) my duties.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I have frequent mood swings.

- ☐ Disagree
 - ☐ Slightly Disagree
 - ☐ Neutral
 - ☐ Slightly Agree
 - ☐ Agree
-

I use difficult words.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I don't mind being the center of attention.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I feel others' emotions.

- ☐ Disagree
 - ☐ Slightly Disagree
 - ☐ Neutral
 - ☐ Slightly Agree
 - ☐ Agree
-

I follow a schedule.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I get irritated easily.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I spend time reflecting (thinking about) on things.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I am quiet around strangers.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I make people feel at ease.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I am exacting (detailed) in my work.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I often feel blue.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

I am full of ideas.

- ☐ Disagree
- ☐ Slightly Disagree
- ☐ Neutral
- ☐ Slightly Agree
- ☐ Agree

Once in a while i can't control the urge to strike/hit another person

- ☐ True
- ☐ False

Given enough provocation, I may hit another person

☐ True

☐ False

If somebody hits me, I hit back

☐ True

☐ False

I get in to fights a little more than the average person.

☐ True

☐ False

If i have to resort to violence to protect my rights, I will.

☐ True

☐ False

There are people who pushed me so far that we came to blows.

☐ True

☐ False

I have become so mad I've broken things.

☐ True

☐ False

I can think of no good reason for ever hitting a person.

☐ True

☐ False

I have threatened people I know.

☐ True

☐ False

I tell my friends openly when I disagree with them.

☐ True

☐ False

I often find myself disagreeing with people.

☐ True

☐ False

I can't help getting in to arguments when people disagree with me.

☐ True

☐ False

When people annoy me, I may tell them what I think of them.

☐ True

☐ False

My friends say that I'm somewhat argumentative.

☐ True

☐ False

I flare up quickly but get over it quickly.

☐ True

☐ False

When frustrated, I let my irritation show.

☐ True

☐ False

I sometimes feel like a powder keg ready to explode.

☐ True

☐ False

I am an even-tempered person.

☐ True

☐ False

Some of my friends think I'm hot-headed.

☐ True

☐ False

Sometimes I fly off the handle for no good reason.

☐ True

☐ False

I have trouble controlling my temper.

☐ True

☐ False

I am sometimes eaten up with jealousy.

☐ True

☐ False

At some times I feel I have gotten a raw deal out of life.

☐ True

☐ False

Other people always seem to get the breaks.

☐ True

☐ False

I wonder why sometimes I feel so bitter about things.

☐ True

☐ False

I know that my "friends" talk about me behind my back.

☐ True

☐ False

I am suspicious of overly friendly strangers.

☐ True

☐ False

I sometimes feel that people are laughing at me behind my back.

☐ True

☐ False

When people are especially nice, I wonder what they want.

☐ True

☐ False

For each of the following statements, please indicate the likelihood that you would engage in the described activity or behavior if you were to find yourself in that situation. Provide a rating from *Extremely Unlikely* (1) to *Extremely Likely* (7). scale

Taking some questionable deductions on your income tax returns.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Have an affair with a married man/woman.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Passing off somebody else's work as your own.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Revealing a friend's secret to someone else.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Leaving your young children home alone while running an errand.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Not returning a wallet you found that contains \$200.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Please rate how likely you are to engage in the following behaviors on a scale of 1 to 7 where 1 means "Extremely Unlikely" and 7 means "Extremely Likely"

Drinking heavily at a social function.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Having unprotected sex.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Driving a car without wearing a seat belt.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Riding a motorcycle without a helmet.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Sunbathing without sunscreen.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Walking home alone at night in an unsafe area of town.

	1	2	3	4	5	6	7	
--	---	---	---	---	---	---	---	--

	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Please rate how likely you are to engage in the following behaviors on a scale of 1 to 7 where 1 means "Extremely Unlikely" and 7 means "Extremely Likely"

Going camping in the wilderness.

	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Going down a ski run that is beyond your ability.

	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Going white water rafting at high water in the spring.

	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Take a skydiving class.

	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Bungee jumping off a tall bridge.

	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Piloting a small plane.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Q194 Please rate how likely you are to engage in the following behaviors on a scale of 1 to 7 where 1 means "Extremely Unlikely" and 7 means "Extremely Likely"

Admitting that your tastes are different from those of a friend.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Disagreeing with an authority figure on a major issue.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Choosing a career that you truly enjoy over a more prestigious one.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Speaking your mind about an unpopular issue in a meeting at work.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Moving to a city far away from your extended family.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Extremely Unlikely	☐	☐	☐	☐	☐	☐	☐	Extremely Likely

Appendix B-Confederate Script

Truth or Lies Script

- 1) **Truth:** I volunteer at a wildlife rehabilitation center
- 2) **Lie:** I've been to more than 30 different countries
- 3) **Truth:** I am going to the everglades with some friends this weekend

After Truth/Lies

Have you guys ever rented a car? I think I'm going to need to rent a van or something for this everglades trip. We have a ton of people and stuff to bring this weekend.

Group Discussion

Experimenter: Ok, so since we are having a group discussion we need to have a volunteer to lead and read the questions. Any volunteers?

Confederate: Umm... I guess I can do it if that's ok with everyone?

Experimenter: (If someone else volunteers pick the confederate) Ok, great! Just make sure everyone understands the questions and gets a chance to talk.

Question 1: Student Loan Debt

Confederate: (Read first question)

Confederate: Well this is definitely something we all know about, anyone want to start?
(If nobody starts then "Ok, I'll go")

Confederate: I don't think I know anyone who hasn't had to take out loans. For me, I really just don't have a choice. I work but it's not enough to pay for tuition completely and my family definitely can't help out.

Confederate: I worry about it all the time, even more so since I want to go to grad school, but I guess they'll pay for themselves eventually. Or at least I hope so. It's just crazy how expensive school is! And it seems like they raise tuition every year. I mean, I know some of it pays for all the services and activities and stuff, but still...

Confederate: I think I also read somewhere that tuition increases lead to less student diversity

Question 2: Healthcare

Confederate: (read question)

Confederate: Ok, who wants to start for this one?

Confederate: This one really is pretty personal to me.

Confederate: We found out my brother has this blood disorder that's rare and hard to treat. The treatments are really intense and so we have to drive him to all these doctor's appointments and take care of him since he's down for a couple of days after every time. His health insurance only covers some of the stuff he needs and so we have all of those super expensive medical bills. My mom had to get a second job to help with those. It's been really stressful for my family.

Confederate: I understand that people want the right to choose and stuff but when it comes to things like this its just really hard for people to keep up with everything when they get sick. It's so expensive. And if you're sick you can't work so what do you do then?

Question 3: Culling

Confederate: This is one of the only things that really makes me mad. Like i said, I work at an wildlife center that rehabilitates animals that cant be released back into the wild, so

I'd like to consider myself an animal rights person and i think that we just treat the environment and the animals in it horribly.

Confederate: It just seems wrong to kill them just because people want their yards to look nice. We took their space away from them after all. The animals were there before us. Why can't they move them somewhere else or something?

Confederate: I really don't believe that having a few extra deer can throw off the whole eco-system. I'm going to the Everglades this weekend with some friends and I know that there's deer there yet they're not throwing of the local flora there so I'm just not buying it.

Question 4: Breed Specific Legislation

Confederate: That seems wrong to me. I used to have a pit bull and they're really sweet!

Confederate: At some point, I don't think there is much of a difference between discriminating against people with certain animals and discriminating against people in general.

Confederate: I guess it's a choice to adopt a certain breed of dog but someone needs to adopt it and take care of it. They shouldn't be punished for doing a good thing. It's really hard to find an apartment if you have any kind of dog but it's extra hard if you have those kinds of dogs, almost impossible. And sometimes they'll raise your rent really high because they know you don't have a choice.

Confederate: It's also not the person or the dogs fault that some dogs give the rest of them a bad name. It's really hard to find an apartment if you have any kind of dog but it's extra hard if you have those kinds of dogs, almost impossible.

Question 5: Driverless Car

Confederate: I can see where they're coming from but it's still wrong to put my life in danger. What if the other car is driving badly and it's their fault that I have to avoid them in the first place? I mean, it's also the companies' responsibility to watch out for their customers so the cars should be programmed to protect me. I know that kind of sounds selfish but.... It's a really hard choice to make.

Confederate: Well.... Maybe there would be fewer reckless drivers so the chance of my life being endangered would be smaller but still... I'm not going to risk my life to save some total strangers.

Appendix C- Group Discussion Questions

1. Many people say that there is a “student loan” crisis in that more students graduate college with substantial debt than in any other generation. In fact, student loan debt, according to some, has led to many young people putting off buying houses and starting families. However universities also need to charge for tuition in order to pay for their services. Is the rise in tuition and student loan debt in recent decades blown out of proportion? Should students who can’t afford to pay for tuition out-of-pocket be allowed to take out loans for school?
2. The US has a private third-party payment healthcare system while many countries have universal or single-payer healthcare systems. Private healthcare keeps taxes lower and allows people and insurers to do as they see fit with less government regulation. On the other hand, some see healthcare as a basic human right that could create more justice among social classes. Which is the better option?
3. In August of 2015, the city of Ann Arbor, Michigan, implemented a deer cull. The cull aims to decrease significantly the population of deer in an effort to reduce automobile accidents, to mitigate the damages to local flora, and to stop the spread of chronic wasting disease, a neurological disease that affects elk, moose, and deer. To achieve this, the city hired sharpshooters to hunt deer until the population was reduced to a target number. Though the deer cull was intended by city officials to promote the good of the public, it has been highly controversial. Soon after it began, a lawn sign campaign was launched with the message “Stop the Shoot”. When, if ever, do benefits to humans outweigh harms to non-human animals like deer? Is culling the most humane way to address overpopulation problems? If not, what is?
4. Breed-specific legislation (BSL) is a term for legislation or policies that restrict certain breeds of dogs to reduce bites and attacks. BSL might involve banning certain breeds from being imported into particular countries or from being brought in to certain places (e.g., apartment complexes or parks). Some people might even include under the heading of BSL policies such as increased insurance premiums for owning certain breeds. Among the breeds most frequently targeted by BSL are Pit Bulls, Rottweilers, Chow Chows, and Doberman Pinschers. Supporters of BSL argue that 75% of dog attacks are committed by these breeds because they have been bred for fighting and for protection, making them strong and unpredictable. Opponents argue that statistics fail to predict the risk of any specific dog attacking event though pit bulls are involved in more of these attacks. Opponents also argue that BSL is a form of discrimination. Is BSL morally permissible? If so, when? If not, why not? If acts of discrimination are morally wrong when committed against human beings, are structurally similar acts of discrimination morally wrong when committed against animals?

5. Tech companies like Google, Apple, and Uber have said that they are interested in making cars that can drive themselves—and driverless cars are already being tested on the roads. Although driverless cars can prevent accidents due to human error, there are moral dilemmas for programmers to consider. For example, if a pedestrian is in the path of the car and swerving to avoid them might cause the car to hit a school bus and both may cause injuries to the rider of the driverless car, who should the car be programmed to save?

Appendix D- Participant Questionnaires: Group Ratings

Please rate the following questions on a scale of 1 to 7 where 1 means "Strongly Disagree" and 7 means "Strongly Agree". Once you are finished, please wait for further instructions.

The other members of my group were interesting.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Strongly Disagree	☐	☐	☐	☐	☐	☐	☐	Strongly Agree

The other members of my group had important things to say.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Strongly Disagree	☐	☐	☐	☐	☐	☐	☐	Strongly Agree

This study has been engaging so far.

	1	2	3	4	5	6	7	
	1	2	3	4	5	6	7	
Strongly Disagree	☐	☐	☐	☐	☐	☐	☐	Strongly Agree

I am motivated to interact with my group and the other group members.

	1	2	3	4	5	6	7	
--	---	---	---	---	---	---	---	--

	1	2	3	4	5	6	7	
Strongly Disagree	☐	☐	☐	☐	☐	☐	☐	Strongly Agree

I like the other members of my group.

	1	2	3	4	5	6	7	
Strongly Disagree	☐	☐	☐	☐	☐	☐	☐	Strongly Agree

I like the group discussion leader/moderator.

	1	2	3	4	5	6	7	
Strongly Disagree	☐	☐	☐	☐	☐	☐	☐	Strongly Agree

The group leader/moderator did a good job of leading the discussion.

	1	2	3	4	5	6	7	
Strongly Disagree	☐	☐	☐	☐	☐	☐	☐	Strongly Agree

The group discussion was interesting.

	1	2	3	4	5	6	7	
Strongly Disagree	☐	☐	☐	☐	☐	☐	☐	Strongly Agree

My group members and I agreed on many of the discussion topics.

	1	2	3	4	5	6	7	
Strongly Disagree	☐	☐	☐	☐	☐	☐	☐	Strongly Agree

Appendix E-Participant Ratings: Interrogation Ratings)

The following questions will ask you to rate the interrogation and interrogator on several dimensions. Once you have completed all questions, please wait for further instructions from the experimenter.

How easy/difficult was it for you to understand what specific information the interrogator was trying to obtain?

	1	2	3	4	5	6	7	
Extremely easy	☐	☐	☐	☐	☐	☐	☐	Extremely Difficult

How motivated were you to achieve balance between not sharing too much or too little information during the interrogation?

	1	2	3	4	5	6	7	
Extremely motivated	☐	☐	☐	☐	☐	☐	☐	Extremely unmotivated

How much new information did you feel you gave to the interrogator?

	1	2	3	4	5	6	7	
A lot of Information	☐	☐	☐	☐	☐	☐	☐	Very little information

How much information did you feel the interrogator had prior to beginning the interrogation?

	1	2	3	4	5	6	7	
A lot of Information	☐	☐	☐	☐	☐	☐	☐	Very little information

How important was the information you gave to the interrogator?

	1	2	3	4	5	6	7	
Extremely important	☐	☐	☐	☐	☐	☐	☐	Not important at all

How honest were you during the interrogation?

	1	2	3	4	5	6	7	
Extremely Honest	☐	☐	☐	☐	☐	☐	☐	Not Honest at All

How helpful were you during the interrogation?

	1	2	3	4	5	6	7	
Extremely helpful	☐	☐	☐	☐	☐	☐	☐	Not Helpful at all

Did you feel that you had enough information on the event in question to be successful during the interrogation?

☐ Yes

☐ No

How would you describe the interrogator's attitude during the interrogation?

☐ Friendly

☐ Businesslike

☐ Bored

☐ Other (please describe)

Did you come up with a strategy for the interrogation? That is, did you have some kind of plan in place where you decided what you would say or not say during the interrogation?

If you had a strategy, please select 'yes' and describe it below.

☐ No

☐ Yes (please describe your strategy)

Did you lie during the interrogation?

☐ Yes

☐ No

Please check all of the following statements as they apply to your interrogation strategy:

☐

Did you tell the interrogator anything that was a lie, such as giving the wrong time or place of the event?

☐

Did you leave out details you knew, but told the interrogator that was all you knew?

☐

Did you mislead the interrogator in any other way? If so, please explain:

Please describe the strategy you used during the interrogation. In other words, how did you attempt to reach a balance between not revealing too much, and not revealing too little, during the interrogation?

Tone: Straightforward, act very formal and businesslike; **You should absolutely NOT be casual, conversational, or friendly. You should be neutral and distant.*

-If the participant asks you a question: say "I can't tell you that"

-if the participant provides a brief or vague answer, repeat the question again.

Interrogator: Somebody wrote something that we're a little concerned about. It was kind of threatening and it sounds like they are planning some kind of protest event that may involve some illegal things.

Is there anything you can tell me about this?

Interrogator: Ok, is there anything else you can tell me?

Interrogator: Alright, well I have some questions I'd like you to answer if you can.

(1) Do you know where this event I mentioned might happen?

(2) Any idea when it might happen?

(3) Does anyone in the group belong to an organization?

Interrogator: Ok, is there anything else you can tell me?

Interrogator: I think we're done for the moment but we might contact you about this again in

Interrogator: Alright, why don't you wait outside the room and someone will be back in a few minutes to give you the last few things you'll need for the study.

Appendix F- Post-Interrogation Checklist: Prior Interrogator Knowledge

Please select all pieces of information you believe **the interrogator knew before the interrogation**. Once you have selected all the details you believe the investigator knew, please let the experimenter know you have finished.

- ☐ The person of Interest was female
- ☐ The person of interest volunteers
- ☐ The person of interest volunteers at a wildlife rehabilitation center
- ☐ The volunteer work involves helping to rehabilitate injured animals who cannot be re-released
- ☐ The person of interest is going out of town
- ☐ The person of interest is going out of town this weekend
- ☐ The person of interest is going out of town with friends this weekend
- ☐ The person of interest is going to the everglades
- ☐ The person of interest is going to the everglades this weekend
- ☐ The person of interest is going to the everglades with friends this weekend
- ☐ The person of interest's favorite type of music is reggae
- ☐ The person of interest has a family member who is ill
- ☐ The family member is a brother

- ☐ The brother of the person of interest has a blood disorder
- ☐ The person of interest used to belong to an activist group
- ☐ The group was concerned with animal/environmental rights
- ☐ The group was called ARG1
- ☐ The person of interest used to own a pit bull
- ☐ The person of interest may have anger issues
- ☐ The trip to the everglades is a part of a demonstration
- ☐ The demonstration will be a protest
- ☐ The protest will be against an oil company
- ☐ The company being protested has been in trouble in the past.
- ☐ The company has been in trouble in the past over environmental issues

Appendix G- Post-Interrogation Checklist: Source Contribution

Please select all pieces of information **you told the interrogator** during the interrogation. When you have selected everything you believe you said during the interrogation, please wait for further instructions.

- ☐ The person of Interest was female
- ☐ The person of interest volunteers
- ☐ The person of interest volunteers at a wildlife rehabilitation center
- ☐ The volunteer work involves helping to rehabilitate injured animals who cannot be re-released
- ☐ The person of interest is going out of town
- ☐ The person of interest is going out of town this weekend
- ☐ The person of interest is going out of town with friends this weekend
- ☐ The person of interest is going to the everglades
- ☐ The person of interest is going to the everglades this weekend
- ☐ The person of interest is going to the everglades with friends this weekend
- ☐ The person of interest's favorite type of music is reggae
- ☐ The person of interest has a family member who is ill
- ☐ The family member is a brother

- ☐ The brother of the person of interest has a blood disorder
- ☐ The person of interest used to belong to an activist group
- ☐ The group was concerned with animal/environmental rights
- ☐ The group was called ARG1
- ☐ The person of interest used to own a pit bull
- ☐ The person of interest may have anger issues
- ☐ The trip to the everglades is a part of a demonstration
- ☐ The demonstration will be a protest
- ☐ The protest will be against an oil company
- ☐ The company being protested has been in trouble in the past.
- ☐ The company has been in trouble in the past over environmental issues

Appendix H- Direct Approach Script

Tone: Straightforward, act very formal and businesslike; **You should absolutely NOT be casual, conversational, or friendly. You should be neutral and distant.*

-If the participant asks you a question: say "I can't tell you that"

-if the participant provides a brief or vague answer, repeat the question again.

Interrogator: Somebody wrote something that we're a little concerned about. It was kind of threatening and it sounds like they are planning some kind of protest event that may involve some illegal things.

Is there anything you can tell me about this?

Interrogator: Ok, is there anything else you can tell me?

Interrogator: Alright, well I have some questions I'd like you to answer if you can.

(1) Do you know where this event I mentioned might happen?

(2) Any idea when it might happen?

(3) Does anyone in the group belong to an organization?

Interrogator: Ok, is there anything else you can tell me?

Interrogator: I think we're done for the moment but we might contact you about this again in

Interrogator: Alright, why don't you wait outside the room and someone will be back in a few minutes to give you the last few things you'll need for the study.

Appendix I-File and Dossier Script

**Tone: bored/disinterested. (The interrogation is just a formality because you already have all the information on file. Occasionally shuffle through the file but NEVER let the participant see what the papers actually are.) You should not be nice or friendly toward the participant. Act as if you don't care that they are there*

Interrogator: Hey, thanks for waiting. First, I have to let you know that I'm going to record this.

Interrogator: (Flip through folder casually) Right, let's just get down to it. Somebody wrote something down that we're a little worried about. It was kind of a threat and we need to make sure we know who it is before we tell somebody about it. I've already talked to ____1/2/3/4____ of the other participants (same as Scharff). And it looks like one of the participants is in to some kind of activism and might be planning something. I think we already have everything we need but **why don't you just tell me if there's anything you know.**

Interrogator: (Open Folder to "demographics" section and read for a few seconds) Right, thanks. So you're a _____ (freshman/sophomore/junior/senior)_____?

Interrogator: Mmhmm.. And a _____(look for participant's major and then flip to a random section of binder) ____ major__?

l;,,

Interrogator: For political association you said __ (look up political association of participant on demographics and the flip to another random section and pretend to be reading info on them)____.

Interrogator: And you are/aren't (flip to "organizations" section of Dossier) involved in any activism or volunteering activities?

Interrogator: Ok, like I said, somebody wrote something a little threatening and we need to find out who it is. It looks like they may be planning to do something involving destruction of some pretty expensive property. It looks like they have something against a certain company that has been in trouble for violating Environmental Protection Regulations quite a few times in the past. Do you have any idea what that might be?

Interrogator: (Flip to new/random section of Dossier). Well, somebody has to know something, and the other participants have told us a few things. Do you know where this event might happen?

Interrogator: (Flip through binder again and pretend to read one of the pages) Right.... that's not what the other participants we talked to said....

Interrogator: Ok, Do you know when this might happen?

Interrogator: (Flip to another random section of Dossier) Ok, it looks like the person we're worried about belongs to quite a few well-known organizations and is kind of an activist. Any idea what organizations that might be?

Interrogator: Are you sure about that, that's not what I have written down here...

Interrogator: Ok, well, why do you think they would want to do something like this?

Interrogator: Alright, I think that's all I need to ask you. Is there anything else you can think of?

Interrogator: We're done for now but we may contact you again in the future. Is that ok?

Interrogator: Great, why don't you wait outside the room for just a minute and somebody'll get the rest of the stuff you'll need to get credit for participating in the study.

Appendix J- Scharff Script

**Tone: Casual and friendly (act as if it's not a big deal! You're just having a friendly conversation with somebody you like). If it helps, pretend like you are talking to your best friend/favorite person. Do not react in any way when participants mention new information. Instead, pretend like they did not say anything at all.*

Interrogator: Hi, sorry for the wait. As I'm sure you know we need to talk to everyone because someone wrote something a little threatening on their individual response form. I've already talked to _____ participant/s _____ (insert number of participant's interrogation order; 1, 2, 3, or 4; if participant is first to be interrogated say that you've already talked to one other participants, if they are second, say that you've already talked to two other participants, if they are third.....) of the other participants. We weren't sure who it was at first but after talking to the other participant/s we have quite a few details. So let me start out by telling you what I know. The person that made this threatening statement seemed very friendly, not the kind of person that you'd expect. They're the type of person that seems very likeable... um... intelligent... mmm... responsible... From what we know, this person has been in some legal trouble in the past for similar things. We're pretty sure we know who it is because one of the scales in that survey we gave you guys measured anger and only one person scored really high on it. A lot of the research shows that people that score high on these kinds of scales tend to have anger problems. They're also the type of people who can let things escalate quickly and get out of hand, no matter how nice they seem. From what we know that's happened to them before and it caused a lot of trouble. Some people got hurt pretty badly too. This person also is very into activism, like the animal rights and environment kind. They went on a pretty long rant about it on some of the stuff you guys had to fill out for the study. It looks like they're planning to interfere with a company who has been in trouble in the past for environmental abuses. Anyway, as you can see, I already know quite a lot, but **why don't you go ahead and tell me if you know anything else.**

Interrogator: I have to admit doing it in the everglades seems pretty strategic on their part. There's been a ton of controversy about that place for months now, what with the agriculture and oil companies trying to move in.

(Pause for 3 seconds and wait for a response from participant, if they respond, ignore them)

Interrogator: It seems like these people have some kind of demonstration planned every other week. I'm not surprised they're planning it for this weekend. For all I know they have something going on every weekend for the next month.

(Pause for 3 seconds and wait for a response from participant, if they respond, ignore them)

Interrogator: Those animal rights people can get so crazy with their demonstrations. I'm not surprised they're doing something like this. It's always something with them and they're all about stirring up controversy and shocking people.

(Pause for 3 seconds and wait for a response from participant, if they respond, ignore them)

Interrogator: I just can't believe it when I hear about people risking everything just to damage some company's property. That stuff is worth millions of dollars and you know those people have enough money to hire lawyers. Even though they aren't planning to harm anybody there's a good chance that will happen with these kinds of things.

(Pause for 3 seconds and wait for a response from participant, if they respond, ignore them)

Interrogator: Well, I certainly didn't expect something like this to happen today but I think we have a pretty good idea of how to handle this from here. Was there anything else you can tell me?

Interrogator: Alright, I think we're done here. We may have to contact you again in the future because of all this. Is that ok with you?

Interrogator: Why don't you have a seat outside the room and I'll be back in a few minutes to give you the last few things you'll need to get credit for the study.

VITA

SARAH A. SHAFFER

Education

2014-2020	Ph.D., Psychology Florida International University Miami, Florida
2018-2019	SEED Funding Award College of Arts, Sciences, and Education Florida International University Miami, Florida
2016-2017	Bursary Award, International Investigative Interviewing Research Group London, UK.
2011-2014	M.S., Psychology Arizona State University Tempe, Arizona
2006-2011	B.A., Psychology (Minor: Anthropology) Arizona State University Tempe, Arizona

Select Conference Presentations and Publications

- Shaffer, S.A., & Schweitzer, N. (2014, March). *Trait impulsivity and the behavioral economics of coercive interrogation: A delay discounting approach*. Accepted poster submission to the annual meeting of the American-Psychology Law Society, New Orleans, LA. Shaffer, S.A., & Evans, J. (2016, March). *Law enforcement beliefs and practices regarding interpreter use*. Paper presented to the annual meeting of the American Psychology-Law Society, Atlanta, GA.
- Shaffer, S.A., Schreiber Compo, N., Klemfuss, J.Z., & Mejias, J. (2016, June). *Comparison of suspect interviewing techniques in non-sexual child abuse: Physical abuse, neglect, and shaken baby syndrome*. Paper presented at the Ninth Annual Conference of the International Investigative Interviewing Research Group, Buckinghamshire, London, United Kingdom.
- Shaffer, S.A., Pena, M. & Evans, J.R. (2017, March). *Interpreting in legal contexts: A comparison of professional interpreters and law enforcement perceptions*. Paper

- presented at the annual conference of the American Psychology-Law Society, Seattle, WA.
- Shaffer, S.A., & Evans, J.R. (2018, March). Intelligence-gathering approaches for more and less capable sources: A comparison of the Scharff technique with accusatory and direct interview techniques. Paper presented at the annual conference of the American Psychology-Law Society, Memphis, TN.
- Shaffer, S.A., Evans, J.R., & Malloy, L.C. (2018, March). Decision making in interrogation and plea-bargaining contexts: The role of individual differences and sentence-relevant factors among college-aged adults. Paper presented at the annual conference of the American Psychology-Law Society, Memphis, TN.
- Shaffer, S. A., & Evans, J. R. (2018). Interpreters in law enforcement contexts: Practices and experiences according to investigators. *Applied Cognitive Psychology*, 32(2), 150-162.
- Shaffer, S.A., Matuku, K., & Evans, J.R. (2019, June). Repeated interviewing using the Scharff technique. Paper to be presented at the Twelfth Annual Conference of the International Investigative Interviewing Research Group (iIRG), Norwegian Police University College, Stavern, Norway.
- Shaffer, S.A., & Evans, J.R. (2019, June). Testing the Army Field Manual's (AFM) interrogation approaches for Human Intelligence Collection within a novel and realistic paradigm. Paper to be presented at the Twelfth Annual Conference of the International Investigative Interviewing Research Group (iIRG), Norwegian Police University College, Stavern, Norway.
- Evans, J. R., Shaffer, S.A., & Walsh, D. (2019). Interpreters in investigative interviewing contexts. In Bull, R. & Blandon-Gitlin, I. (Eds). *The Handbook of Legal and Investigative Psychology*.
- Shaffer, S.A., Matuku, K., & Evans, J.R. (Under Review) Comparing the Scharff technique and the Fear Up/Fear Down Approaches across sources with differing levels of knowledge. *Law and Human Behavior*.
- Shaffer, S.A., Evans, J.R., & Malloy, L.C. Exploring the role of individual differences in interrogation and plea-bargaining decisions. *Applied Cognitive Psychology*.
- Shaffer, S.A., Schreiber Compo, N., & Klemfuss, J.Z. (under review). Suspect interviewing in law enforcement investigation of non-sexual child abuse: Physical abuse, neglect, and Abusive Head Trauma/Shaken Baby Syndrome. *International Journal of Evidence and Proof*.
- Shaffer, S.A., Matuku, K., & Evans, J.R. Repeated interviewing using the Scharff technique.