Interviewing Witnesses and Victims

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Information is the lifeblood of investigations and it is the ability of investigators to obtain useful and accurate information from victims and witnesses that is most crucial for case solution and effective criminal prosecution. Yet full and accurate memory recall is difficult to achieve during a police interview. We have spent much of the past 25-30 years addressing this issue. In this chapter, we begin by describing a typical police interview, followed by an overview of the origins and underpinnings of the Cognitive Interview (CI), an innovative method to enhance witness recall and the focus of this chapter. We then present a step-by-step description of the main elements of the general CI protocol for the practitioner. Following a description of the empirical tests and some practical applications, we end with a brief overview of one of the more recent extensions of the CI for use with suspects (the CIS).

Past Interview Practices

Two decades ago, Fisher, Geiselman, and Raymond (1987) and George and Clifford (1992) described typical interviewing protocols used by American and British police, respectively. The results were surprisingly uniform and somewhat discouraging. Following a perfunctory effort to establish rapport, interviewers generally began interviews by making an open-ended request to the witness: "Tell me what happened." After listening to an initial outburst of crime-related facts, often no more than just a few seconds, the interviewer interrupted the witness's narrative response and asked a series of direct, short-answer questions, on the order of: "How tall was he? How much did he weigh? Did he have a weapon?" These questions, which reflect generically salient crime facts, often were asked in the same order to all witnesses using a standardized checklist. In addition to these neutral questions, the interviewers often asked leading or suggestive questions, such as "He was wearing a red shirt, wasn't he?" If a witness did not provide the requested details, the interviewer did little or nothing to assist the witness. In practice, police interviewers often dominated the social interaction with the witness by asking

many questions, and by asking questions that elicited only brief answers. This relegated the witness to sit passively waiting for interviewers to ask questions (Fisher et al., 1987). To compound the problem, interviewers often discouraged witnesses from taking active roles by interrupting them in the middle of a narrative response.

We note, with a sigh of renewed discouragement, that similar patterns of lesser quality interviewing procedures have been found in more recent interviews conducted by German (Berresheim & Weber, 2003), Canadian (Snook & Keating, 2010), and American police (Schreiber & Fisher, 2005). These practices have the adverse effects of reducing the amount of information witnesses provide and increasing inaccurate responses. This is because these practices entice witnesses to (a) withhold information, (b) not provide any unsolicited information, (c) give abbreviated answers, and (d) volunteer answers they are unsure of. Furthermore, they disrupt the natural process of searching through memory, thereby making memory retrieval inefficient.

We were discouraged by the quality of interviews, in part, because forensic research scientists have known for a while how to conduct interviews effectively. Of these techniques, the most prominent are the Cognitive Interview, Conversation Management, the Memorandum of Good Practice, and the Step-wise method. Each of these protocols is composed of many specific techniques that have generally been found to (a) increase the amount of information gathered, and/or (b) decrease the likelihood of a recalling an event incorrectly. Common to all of these protocols are several core elements, including (a) developing rapport with the witness, (b) asking open-ended questions primarily, (c) asking neutral questions and avoiding leading or suggestive questions, and (d) funneling the interview, beginning with broader questions and narrowing down to more specific questions. We shall focus here on the CI procedure because it is more encompassing than the others and it has been the focus of extensive scientific testing.

The CI is a systematic approach to interviewing witnesses with the goal of increasing the amount of relevant information obtained without compromising the rate of accuracy. The CI is based on scientifically derived principles of memory and communication theory as well as extensive analyses of law-enforcement interviews. Most important, the CI has been found in empirical studies to produce significantly more information than standard question-and-answer type interviews and without decreasing accuracy.

Origins and Underpinnings of the CI

In the early 1980s, a constellation of factors contributed to the development and eventual refinement of the CI techniques for investigative interviewing. First, the U.S. Department of Justice set out to fund an effort to produce a protocol for use by law enforcement for purposes of interviewing victims and witnesses of crime (National Institute of Justice - Geiselman & Fisher, 1985). The most notable police procedure at the time was the Reid and Associates confrontational interrogation technique for use with suspects (Inbau, Reid, Buckley, & Jayne, 2001), not for use with witnesses and victims. Second, the one innovative technique employed by law enforcement at the time, forensic hypnosis, was becoming mired in legal issues (e.g., People v Shirley, 1982; Sanders & Simmons, 1983). Third, the RAND Corporation (1975) had just completed a survey of law-enforcement professionals and found that 85% of what police do on a daily basis is talk to citizens, whereas only 2% of the respondents had received any formal training on how to interview people. Fourth, the two of us were eager to steer our respective basic theoretical research programs on memory retrieval in a more applied direction.

The first task in building the CI was to review the literature from cognitive psychology to identify candidate techniques for enhancing memory retrieval. This search led to developing the original version of the CI. Since that time, the basic set of memory retrieval aids was transformed through a progression of research into the enhanced CI, which is described in our "how-to" manual (Fisher & Geiselman, 1992).

The core elements of the CI are organized around three basic psychological processes: memory and cognition, social dynamics, and communication. Some of the memory-enhancing components of the CI protocol attempt to maximize the amount of feature overlap between retrieval strategies and the witness's memory record (Flexser & Tulving, 1978) or attempt to have the witness explore multiple retrieval routes to the memory record (Tulving, 1974). Other cognitive elements assist witnesses to use their cognitive resources efficiently. The social dynamics include rapport and encouraging active witness participation. The communication elements include promoting extensive, detailed responses and utilizing non-verbal as well as verbal modes of expression.

Step-by-Step Sequence of the CI

The CI follows a somewhat flexible order intended to maximize the effectiveness of the individual techniques. The general strategy is to guide the witness to those memory records that

are richest in relevant information and to facilitate communication when these mental records have been activated. The recommended questioning sequence, which is common to the Step-wise method (Yuille, Hunter, Joffe, & Zaparniuk, 1993) and the Memorandum of Good Practice (Home Office, 2002), is to progress from asking open-ended questions to more specific follow-up probing questions. The sequence of the CI protocol provides a general framework for conducting an investigative interview of most persons including civilian eyewitnesses, victims, police, and more recently, suspects. However, it is important to understand that interviewers must be flexible and alter their approaches to meet the needs of each witness rather than to use a rigid template, causing the witness to adapt. In this regard, the CI should be seen as a toolbox of techniques that can be drawn upon as the situation presents itself. The CI is more of a set of general guidelines or a collection of techniques than it is a recipe for conducting an interview. Each witness and situation will call for a slightly different approach. Consequently, it is not surprising that most investigators who have received training on the CI incorporate some, but not all elements of the CI, into any given one of their interviews (Dando, Wilcock, & Milne, 2009; Kebbell, Milne, & Wagstaff, 1999).

The CI protocol is divided into five sections. Although this is the conventional sequence, interviews invariably will deviate from this plan somewhat as unexpected information arises. First, an introduction is made that establishes a relationship between the witness and the interviewer. At this point, the interviewer explains the expected social dynamics for the remainder of the interview, emphasizing a witness-centered approach. The interviewer then gives the witness an opportunity to provide an uninterrupted narration of what s/he experienced. During this time, the interviewer is able to construct a strategy for eliciting additional information. Based on the contents of the uninterrupted narrative, the interviewer guides the witness through several information-rich memory representations (scenes, images). The interviewer then reviews the information generated during the entire interview, followed by the close of the interview in a manner that will extend its functional life.

Introduction

During the introduction phase of the CI, the interviewer will (a) develop rapport with the witness, (b) encourage the witness to play an active role by volunteering information, (c) convey his or her investigative needs for extensive, detailed information, and (d) convey that a thorough

search of memory will require concentration. The introduction establishes the appropriate psychological states and interpersonal dynamics to promote efficient memory recall and communication during the remainder of the interview. Victims and witnesses often will be anxious about the interview process because they are uncertain about what is expected of them and how the process will transpire (Sydeman, Cascardi, Poythress, & Ritterbrand, 1997). CI interviewers attempt to reduce this uncertainty by previewing the structure of the interview, and especially by explaining the witness-centered nature of the interview. Furthermore, victims are encouraged to ask questions about the process. Foreshadowing the interview should reduce victims' anxiety about the process as it reduces uncertainty.

Rapport. Witnesses, and especially victims, often are asked to give detailed descriptions of intimate, personal experiences to police officers, who are complete strangers. They must be psychologically comfortable with the interviewer as a person to go through the mental effort and emotional distress of describing crime-related details. If anything, the police investigator's official appearance (badge, uniform, gun) may create a psychological barrier between the police officer and the witness. To overcome this natural barrier, CI interviewers will invest time at the outset of the interview to develop meaningful, personal rapport with the witness (Abbe & Brandon, 2013; Collins, Lincoln & Frank, 2002; Shafer, & Navarro, 2012), a feature often absent in police interviews in the past (Fisher et al., 1987). Interviewers should develop a set of topics that they become comfortable in using to begin the casual conversation. There are popular books written for this purpose (Lowndes, 2003). One strategy is to explain to the witness, "Before we begin, I would like to get to know you a little better – what do you do on a typical day?" The benefits of developing rapport include freeing the witness of some anxiety about being interviewed that might otherwise consume some of the witness's cognitive resources. Furthermore, the interviewer must interact with the victim not merely as a source of evidence that can be applied toward solving the crime. Rather, the interviewer should express his/her concern about the victim's plight, as a person who has undergone a potentially life-altering experience (Fisher & Geiselman, 2010).

Transfer Control. The interviewer generally has higher social or expert status, which normally dictates that that the interviewer should control the interview; however, the witness has first-hand

knowledge of the crime, which dictates that the witness should control the interview. Resolving this apparent conflict is crucial for a successful interview. Therefore, after developing rapport, the CI interviewer will in effect transfer control of the interview to the witness. The interviewer will openly acknowledge that s/he was not at the scene and that the witness must play an active role in the interview, "I was not there when this happened, so I will be relying on you to do most of the work here." This clarifies for the witness the role that s/he will be playing during the interview, and that s/he should not wait for the interviewer to ask questions. It is commonly desired that the interviewer contribute only 20% of the talking during an investigative interview (Snook & Keating, 2010), thus preserving the "80-20 rule."

Detailed Recall. Police interviews require witnesses to describe people, objects and actions in more detail than civilians normally do in casual conversation. Inducing such an extraordinary level of description requires that police convey this goal explicitly. Witnesses often withhold information because they do not know what is relevant for a police investigation. To minimize witnesses' withholding information, CI interviewers will instruct witnesses to report everything they can recall, whether it is trivial, out of chronological order, or even if it contradicts a statement made earlier. (Note that this is not an invitation to guess, as is sometimes inferred incorrectly, Memon, Wark, Bull, & Kohnken, 1997.) One technique is to explain to the witness that in normal conversation we typically tell others only the highlights about an event, but for purposes of this interview, it is desired that you be as detailed in your recollections as possible. The witness will be instructed not to consider what might have investigative value, but rather to be as complete as possible.

The interviewer will explain further that retrieving memories often is not an easy task, but rather this will require concentration. The interviewer will thank the witness in advance for anticipated effort and co-operation. To promote high accuracy in recall, interviewers should explicitly instruct witnesses not to guess, and to indicate that they "don't know" or "don't recall" when that is the case. Interviewers can promote more efficient use of witnesses' limited mental resources by offering them the option to close their eyes when recalling (Bekerian & Dennett, 1997; Perfect, Wagstaff, Moore, Andrews, Cleveland, Newcombe, Brisbane, & Brown, 2008). Doing so, however, requires that the interviewer has developed good rapport with the witness.

Interviewers can further assist witnesses to focus their mental resources more effectively by minimizing physical distractions, such as phone calls during the interview.

Open-ended narration

Following completion of the introduction phase of the CI, in preparation for requesting an open-ended narration of the target event, the interviewer will request that the witness take a few moments to mentally go back to the time and place where the event happened. This process is commonly known as reinstatement of the context. Retrieving information from memory is most efficient when the context of the original event is recreated at the time of recall (Tulving & Thomson, 1973). Interviewers should therefore instruct witnesses to mentally recreate the external factors (weather), emotional factors (mood, fear), and cognitive factors (thoughts) that existed at the time of the original event. Sights, sounds, and smells are relevant as well as the witness's state of mind leading up to the event. The interviewer will give the witness the time necessary to recreate the period of time leading up to the target event.

Reinstating the context also can help circumvent any additions or contaminations to the witness's memory record that may have occurred subsequent to the event. By directing the witness's thoughts back to the encoding of the original event in context, the narrative is less likely to reflect post-event influences, additions during post-event rehearsal, or the last time the witness told the story to someone else. In part for this reason, the CI has been found to reduce misleading question effects in most of the studies where this has been tested (Geiselman, Fisher, Cohen, Holland & Surtes, 1986; Memon, Zaragoza, Clifford & Kidd, 2010; Milne & Bull, 2003 – however, see LaPaglia, Wilford, Rivard, Chan, & Fisher, in press).

Once the witness signals to the interviewer that s/he has the target time frame in mind and has mentally recreated the context, the interviewer should request the open-ended narrative – "Tell me in your own words what happened in detail from beginning to end." The initial open-ended narration permits the interviewer to infer the witness's overall representation of the event and to develop an efficient strategy for probing the various memory records. The interviewer will note the witness's "mental images" of the crime (e.g., perpetrator, weapons), and will develop a preliminary plan about which images to probe, in what order, and which questions to ask when probing each image. If the initial narrative is not interrupted, witnesses will convey a large portion of their total recall during this phase (Roberts & Higham, 2002). Not interrupting is one

of the more difficult skills for investigators to learn. Interrupting frustrates witnesses by making it difficult for them to narrate their story and to communicate all of their information.

It is preferable that the interviewer record only cursory notes during the witness's narrative so as to flag segments that the interviewer wants to probe with follow-up questioning. This will allow the interviewer to concentrate on what the witness is saying. It is advisable to use some of the witness's own words in these notations. By using the witness's own words in the follow-up questioning, the interviewer will demonstrate to the witness that s/he has been listening and will minimize the potential for miscommunication.

Follow-up Questions – Probing Scenes and Images

In the probing stage, the CI interviewer will guide the witness to the richest sources of information (scenes or "mental images") and thoroughly exhaust these sources of their contents. To accomplish this task, the interviewer will carry out the plan developed while listening to the witness's open-ended narrative.

Principle of Detail. The most promising scene from the narrative should be addressed first (principle of detail – Fisher & Geiselman, 1992). This is because elements in the memory record are associated with the other elements such that recalling one detail can trigger recollection of others, and because both the interviewer and the witness will become less able to fully concentrate as the interview progresses due to fatigue. Each scene as notated by the interviewer will be addressed independently.

There are a number of strategies for asking the probing questions that should improve productivity, as follows. Interviewers can avoid contributing to the cognitive load of witnesses by refraining from asking questions while witnesses are searching through memory (interrupting the thought process) and, in general, by asking fewer, but more open-ended questions. Asking fewer questions and encouraging witnesses to narrate their story in an uninterrupted fashion also makes the interviewer's task easier—by not having to formulate many questions—and frees the interviewer to listen more effectively to the witness's narration. Rather than asking many specific questions, interviewers should explicitly instruct witnesses on the importance of describing events in great detail. In general, witness recall is much more accurate when answering open-ended questions (e.g., "Describe the robber's appearance.") than closed

questions (e.g., “Did the robber have dark or light hair?”). The interviewer should allow the witness the time needed to formulate an answer and to search memory adequately. This can be accomplished by pausing after each of the witness’s answers, perhaps 3-4 seconds, and by using longer pauses strategically. The interviewer should never talk over a witness or appear to want to ask a question while the witness is still answering a previous question. To do so could serve to create an interviewer-centered rather than a witness-centered interview environment.

Interviewers and respondents often exchange ideas using only the verbal medium, but some people are more expressive non-verbally, and some events are better described non-verbally (Leibowitz, Guzy, Peterson, & Blake, 1993). Ideally the response format should be compatible with the witness's mental record of the event, thereby minimizing the need to transform the mental record into an overt response (Greenwald, 1970). If an event is inherently spatial, (e.g., the location of objects within a room) then witnesses should be allowed to respond spatially, by drawing a sketch of the room or by placing model objects within a (model) room. Encouraging witnesses to sketch out the crime scene could promote more extensive recall (Dando, Wilcock, Milne, & Henry, 2009a, 2009b). Drawing sketches has also been shown to enhance recalling abstract information, for example, how one made earlier decisions (Hirn, Fisher, & Carol, 2012). This might be particularly valuable when debriefing police officers after a shooting incident, or asking criminals to describe their thought processes when planning and enacting a crime.

Another key to successfully probing a witness’s memory is to ask for the same information repeatedly but with different questions (e.g., visual, auditory; forward, reverse). Following the multi-component conception of memory, multiple searches of memory should lead to more finds, but only if different access routes are explored. Instead of asking, “Tell me more about his appearance” multiple times, ask about the intruder in different ways, e.g., “Did the intruder remind you of anyone you know?” For objects, instead of asking “Tell me more about the objects” multiple times, ask about different properties of the objects, e.g., “How much did it weigh; what kind of material was it made out of?” For speech characteristics, “Were any unusual words used; “did the person sound foreign or native-born; educated or uneducated?” For names of persons or places, suggest that the witness go through the alphabet searching for the first letter of the name as a cue or think about the length of the name or whether it was a typical American name or was it foreign-sounding. For numbers, instruct the witness to think about partial information such as size and orientation (MacKinnon, O'Reilly, & Geiselman, 1990). To

learn about additional such tools from the CI toolbox for requesting specific kinds of information, see Fisher and Geiselman (1992).

As a note of caution, interviewers should refrain from applying social pressure on witnesses or otherwise encouraging them to answer questions they are uncertain of. Similarly, interviewers must guard against inducing feelings of inadequacy by formulating questions in a negative tone, "You don't recall his name, do you?" Such negative questioning may reinforce the victim's sense of inadequacy. This form of the question also allows the victim to answer the question easily with a "No" response rather than encouraging a deep search through memory.

Principle of Momentum. The CI interviewer should not skip around between scenes (principle of momentum – Fisher & Geiselman, 1992) but rather should ask all questions relevant to one scene at a time, while the witness has that scene in consciousness. Interviewers should try to be aware of the witness's currently active mental image, so as to time their questions most efficiently. This practice may require interviewers to defer asking certain questions until later in the interview, when the questions are compatible with the witness's mental image. For instance, if the interviewer needs to learn about the license tag of the getaway car, but the witness is currently thinking about the robber's face and not about the getaway car, then the interviewer should defer asking the witness to describe the license tag until the witness is thinking about the getaway car. Memory for the perpetrator's face should be more accessible when the witness is thinking about the perpetrator than when the witness is thinking about the getaway car. In general, event details will be most accessible when they are perceptually related to the witness's current mental image (Pecher, Zeelenberg, & Barsalou, 2003)

Multiple and Varied Recall. As noted above, the more often witnesses search through their memories about an event, the more new details they likely will recall. Interviewers can enhance witness recollection by asking witnesses to describe the event multiple times within the interview, but in ways that promote varied retrieval rather than repeating the same line of questioning. Two techniques from the original CI serve this purpose: (a) Requesting the narrative again but this time in reverse order, and (b) requesting the witness to change physical or conceptual perspectives on the event. Each of these techniques typically is employed near the end of the specific-questions phase of the CI protocol. Each was taken from research on memory

for stories (Anderson & Pichert, 1978; Whitten & Leonard, 1981) and is based on the concept that there are multiple access routes to memories.

The reverse-order technique can help the witness generate information that is incidental or atypical to the target event because recalling an event in reverse order is less amenable to thematic-based recall (Geiselman & Callot, 1990). Eliciting these incidental details can be crucial for case solution. Recalling an event in reverse order is more of a frame-by-frame approach compared to recalling the event in forward order where most often there is a clear chronology of events (Bransford & Franks, 1971). The results of a recent study suggest that the reverse-order technique should be employed only after the forward narrative report and the follow-up questioning phase have been completed (Dando, Ormerod, Wilcock, & Milne, 2011). Otherwise, this technique might disrupt the temporal clustering of information stored in the witness's memory.

One form of the change-perspectives technique (Boon & Noon, 1994) asks the witness to think about the various physical perspectives s/he may have had throughout the event. A second form of the change-perspectives technique asks the witness to consider the perspective of another person at the event (e.g., "What do you think the cashier saw?"). With the latter application of the change-perspectives technique, a caution to the witness against guessing is recommended, especially with children or mentally challenged persons who may have difficulty taking on the perspectives of others (Saywitz, Geiselman, & Bornstein, 1992).

Review

Reviewing the information already notated allows the interviewer to check on its accuracy. It also provides the witness with an opportunity to recall additional information. During the review stage, the interviewer should clarify any uncertainties or discrepancies that occurred earlier in the interview. The interviewer should read his or her notes back to the witness and ask the witness to (a) correct any errors or omissions in the interviewer's notes, and (b) inform the interviewer of any new recollections. The interviewer should point out in a non-challenging way any ambiguities or contradictions within the witness's statement and ask the witness to clarify these matters, even if that means to indicate that the witness is not certain about the matter.

Close

When closing the interview, the interviewer will fulfill any official police requirements associated with the investigation, e.g., collecting background information about the witness.

Then, the interviewer should thank the witness for the witness's help and co-operation. The interviewer also should encourage the witness to contact him or her several days later when the witness thinks of new information. We have found that some investigators prefer to explicitly tell witnesses that they will call them in a couple of days to see if they have thought of any additional information. Extending the life of the interview is important, given the likelihood of delayed recollections, especially following incidents that were emotionally arousing for the witness (Fisher, Brewer, & Mitchell, 2009). In one such real-world case described to us recently, a traumatized witness experienced a delayed recollection of a box outside her apartment that had not been there prior to a home invasion. The subsequent latent print analysis of the recovered box revealed the identity of one of the intruders/murderers.

Empirical Tests and Evaluations of the CI

The CI is sometimes presented on popular television crime shows as being magical or mystical. In fact, however, the CI is based on well-founded principles of cognitive psychology. The CI is a good-practice, information-gathering technique that has been tested rigorously in more than 100 laboratory experiments, most of which were conducted in the United States, England, Germany or Australia. In these studies, volunteer witnesses (usually college students, but not always) observed either a live, innocuous event or a videotape of a simulated crime. Shortly thereafter (ranging from a few hours to several days), the witnesses were interviewed by a trained researcher—or in some cases by experienced police officers—who conducted either a CI or a control interview. The control interview was modeled after a typical police interview or after a generally accepted interview protocol such as the UK Memorandum of Good Practice. Across these studies, the CI typically elicited between 25%-50% more correct statements than did the control interview. The effect was extremely reliable: Of the 55 experiments examined in a meta-analysis conducted in 1999 (Koehnken Milne, Memon, & Bull, 1999), 53 experiments found that the CI elicited more information than did the comparison interview (median increase = 34%). A second meta-analysis in 2010, with a larger sample of studies produced similar results (Memon, Meissner, & Fraser, 2010). Equally important, accuracy was just as high in the CI interviews as in the comparison interviews (for reviews, see Bekerian and Dennett, 1993; Fisher and McCauley, 1995 and Fisher & Schreiber, 2007). The CI also typically does not contribute to the creation of false memories (Sharman & Powell, 2013), but instead serves to

reduce misleading question effects (Geiselman, Fisher, Cohen, Holland & Surtes, 1986; Memon et al. 2010; Milne & Bull, 2003), in a sense inoculating the witness from inadvertent misleading questions. We attribute these latter findings to the use of context reinstatement, which directs the witness back to the original memory record, and to a greater reliance on open-ended questions.

In addition to the laboratory studies, two field studies that examined interviews with victims and witnesses of real crimes found the advantage of the CI to hold equally well. In Fisher, Geiselman, & Amador (1989), 16 experienced detectives from the Metro-Dade (Florida) Police Department tape recorded several interviews, mainly from victims or witnesses of purse snatchings or commercial robberies. The detectives then were divided into two equivalent groups based on their supervisors' evaluations and on their objective performance (number of statements elicited on the tape recorded interviews). One of the two groups received training on the CI, whereas the other did not. Although the two groups were comparable before training, the trained group of detectives elicited 63% more information than the untrained group after training. Furthermore, the trained detectives elicited 48% more facts after training than before training. Of the seven trained detectives, six improved dramatically (34% - 115%). Only the one detective who did not change his interviewing style failed to improve.

A parallel field study was conducted in England by George and Clifford (1992, 1996) in which experienced police investigators tape recorded interviews before and after training (or no training for some). The investigators' questioning styles changed dramatically as a result of CI training. Compared to the untrained group, and also to themselves before training, the CI-trained group (a) asked fewer questions, (b) asked a higher proportion of open-ended questions, (c) asked fewer leading questions, and (d) injected more pauses. These changes in questioning style were also accompanied by an increase in the amount of information elicited. The CI group elicited 55% more information after than before training and 14% more information than did the untrained group.

Since the late 1990's, several studies have examined whether the CI could be used effectively with children and other "non-standard" witnesses. In some of these studies, the experimental witnesses were young children (from 7-12 years of age: e.g., Milne & Bull, 1996; Larsson, Granhag, & Spjut, 2003; McCauley & Fisher, 1995; Saywitz et al., 1992), in some studies, the witnesses were older people (Mello & Fisher, 1996; McMahon, 2000), and in some studies, the witnesses were young adults with learning disabilities or some other cognitive deficit (Brown &

Geiselman, 1990; Geiselman & Padilla, 1988; Milne, Clare, & Bull, 1999). The patterns of results are remarkably similar to those found with "normal" adults, namely, the CI elicits considerably more information than the control interview, and at comparable or slightly higher accuracy rates.

Aside from the positive witness performance data, we were interested in how the CI would appear to an external observer. To address this issue, Fisher, Mello, and McCauley (1999) had research subjects listen to tape recordings (taken from an earlier CI experiment) of witnesses being interviewed with a CI or with a standard police interview. The listeners then rated the credibility of the witnesses on several dimensions (e.g., accuracy of memory, confidence, intelligence, trustworthiness). In two separate experiments, one in which the witnesses were children and the second in which the witnesses were adults, there were no differences in perceived credibility. These non-differences were apparently not due to insensitivity of the data, as other differences were observed: specifically, CI interviewers were perceived to be less manipulative than were conventional interviewers. This was a serendipitous finding, but, with the benefit of hindsight, not all that surprising given that CI interviewers ask fewer questions, ask fewer leading questions, and in general follow a more witness-centered approach than do conventional interviewers. On balance, these results suggest that, if anything, the CI should be more, not less, acceptable as an interview procedure—assuming, of course, that it is desirable for an interviewer not to manipulate the witness's testimony. Indeed, one study has found police officers in the U.K. to judge complainants who received a CI to be more credible than witnesses who received a standard interview (Westera, Kebbell, & Milne, 2011). There also is reason to believe that the witnesses themselves will view their experience of being interviewed more favorably (Fisher & Geiselman, 2010). This is important because they also will have a more favorable impression of the policing agency and consequently they will be more likely to help the police in the future. Also, recent research has shown a link between greater victim satisfaction with the police and a reduction in the likelihood of PTSD-type symptoms (Kunst, Rutten, & Knijf, 2013).

In summary, the benefits of the CI have been found repeatedly by different researchers, with different witness populations, and in a variety of settings. The CI elicits considerably more information than the typical police interview while maintaining the same or achieving a higher level of accuracy compared with conventional police interviews. The CI appears to external

observers to be less manipulative than standard interview techniques, and witnesses will likely consider their experience of being interviewed more favorably.

For some time now, the CI has been taught and/or implemented by several policing agencies and allied investigative agencies worldwide (Fisher & Geiselman, 1997). Today, those agencies include: FBI, National Transportation Safety Board, Department of Homeland Security, Rural Policing Institute (Federal Law Enforcement Training Center), Defense Intelligence Agency, UK Home Office, Calgary Police Service, Singapore Police Force, ICAC (Hong Kong), as well as several mid-level police departments around the United States. However, unlike in the U.K., a comprehensive, coordinated program for training on the CI has yet to be established in the U.S.

Of course, the CI is not without its limitations. For example, recent research has found that the general CI is not effective for persons diagnosed with Autism Spectrum Disorder (Maras & Bowler, 2010). However, follow-up research suggests that this limitation can be ameliorated in large part by taking these witnesses physically back to the scene of the crime for the CI rather than having them mentally reconstruct the context at a different location as is typically the case (Maras & Bowler, 2012). Work is ongoing for this important group of witnesses, but, to the best of our knowledge, parallel research for persons with different stages of Alzheimer's disease who must be interviewed as victims or witnesses of crime has yet to begin, although it is sorely needed by police.

Practical Applications

Given the success of the CI in laboratory and field experiments, how does it fare in real-world investigations? Geiselman and Fisher (1997) reported several instances in which the CI was used successfully to solve real-world cases, ranging from a witness to a kidnapping, to a child molestation victim, to a witness of a politically motivated bombing. More recently, an investigator from the U.S. Bureau of Alcohol, Tobacco, and Firearms reported conducting an extended CI with a 38-year old woman who had witnessed a homicide as a 4-year old child. The interview elicited many recollections, most of which were corroborated by police records established at the time of the crime (e.g., location of objects and furniture at the crime scene). A victim who had been raped in her own home in Los Angeles recalled crucial information while using a combination of the reverse-order and change-perspectives techniques during a CI, after previous attempts with standard interview procedures had failed. During the CI, the interviewer asked her to mentally go through her house from different perspectives, ultimately leading to that

portion of the memory record with critical investigative value. Similarly, after repeated questioning, a child victim in Los Angeles disclosed verifiable elements of being molested in his room only after the detective suggested that he take on the perspective of a stuffed animal that was on his shelf. We also have received some encouraging feedback from the National Transportation Safety Board, whose investigators received training on the CI and shortly thereafter conducted extremely effective interviews of crew members of the USS Greenville, the American submarine that collided at sea with a Japanese fishing boat in February, 2001. The CI also has been credited for solving crimes when applied to suspects, although that was not an intended application of the original or enhanced CI. In one case from Texas, the suspect was attempting to avoid implicating his friend by describing a different person as his accomplice, but during the CI he momentarily forgot this deception and fully described his friend. In another case from California, the suspect described elements of the crime during the CI that only the killer could have known, whereas during prior interviews he said that he had seen nothing. This is not surprising in that the CI is designed to elicit large amounts of information from people using a rapport-based information-gathering approach, and sometimes deceptive persons are induced to say too much. Of course, we recognize that these reports are merely anecdotes, which are subject to many biases.

An additional recent application of the CI has been for investigations following use-of-force incidents involving police officers. Interviewing officers in these situations is a sensitive matter given that the officer is a witness, victim, and now in some sense is a suspect until the matter is cleared. State of mind and ongoing threat assessment are important with these law-enforcement witnesses, not just the material facts of the matter (Wilson & Geisleman, 2011). The CI is ideally suited for this circumstance given that it is an information-gathering protocol, rather than a confrontational approach, where thoughts and emotions are addressed. The application of the CI in this arena has been generally welcomed by policing agencies (Force Science News, 2011, #169).

Offsetting these successes, British police reported that the complete CI was sometimes difficult to implement (Kebbell, Milne, & Wagstaff, 1999; Kebbell & Wagstaff, 1996). Officers interviewed by these researchers reported that they found it difficult to communicate to witnesses some of the CI's mnemonic instructions. Kebbell and Wagstaff (1996) note, however, that it may be possible to overcome these problems with suitable training. Other police officers

interviewed about their experiences with the CI also have reported that using the complete CI requires more time than is sometimes available (Kebbell, Milne, & Wagstaff, 1999). This commentary reflects in part a mistaken belief that the CI must be implemented as a whole rather than as a toolbox. Nevertheless, in response to this practical concern, Davis, McMahon, and Greenwood (2005) set out to create a shorter version of the CI that would still capture most of the information gathered by the complete CI. Their laboratory-based research demonstrated that a pared-down version of the CI saved considerable time and yet was almost as effective as the complete CI. Dando et al. (2009a; 2009b) also have created modified versions of the CI for use by patrol officers in time-limited situations. We find this a healthy development in the progression of CI research, trying to make it more efficient and sensitive to real-world conditions.

The two meta-analyses of the available studies of the CI found greater effects of the CI with a shorter delay before the initial interview than following a two-day delay, but there still was a substantial advantage for the CI over control interviews following a delay. Therefore, the general recommendation would be to conduct the CI as soon as possible following an incident but that the CI protocol should be considered regardless of timing. None of the available studies on delaying the CI have included potentially significant extraneous factors such as sleep deprivation or lingering stress, either of which might favor a decision to delay the interview. The CI requires time and requires the witness's full cooperation and exhaustive participation. It is reasonable to expect that a well-rested witness would produce more complete and more accurate recall than would a less-rested witness, especially following high-stress situations (Geiselman, 2010; Zimmerman, 2003). Unfortunately, the decision to delay the full investigative interview to allow for rest typically must be made based on surface indicators of witness stress. Therefore, following stressful incidents such as officer-involved shootings, it has been recommended that as a general rule, the involved officers should sleep first and give their statements later (Artwohl, 2002). Delaying the interview would not preclude a limited request to provide enough information to get the investigation started, perhaps using a shortened version of the full CI as noted above.

The CI for Suspects (CIS)

The original and enhanced versions of the CI protocol were developed for use with co-operative victims and eyewitnesses, but as noted in the previous section, the CI also has been

used successfully to interview suspects in some real-world cases. We have learned about these cases by way of reports from those practitioners directly involved. These success stories typically have involved either of two scenarios: (a) the subject recalls and inadvertently reports details of the crime that only the perpetrator could have known, or (b) the subject recalls details that contradict details s/he previously reported to the police but that conform to an alternative police theory of the case. The CI is particularly suited for these kinds of revelations because the CI is a witness-centered approach that relies on open-ended questions and narrative responses. That is, the subject generates the information almost exclusively on his/her own rather than responding to leading, close-ended questions from the investigator.

Considerable research has shown that even with some training, distinguishing truthful from deceptive oral narratives based on verbal, vocal, and behavioral indicators alone is not an easy task, with accuracy often just above chance (Bond & Depaulo, 2008; Geiselman, Elmgren, Green, & Rystad, 2011; Geiselman, Musarra, Berezovskaya , Lustig, & Elmgren, 2013). Interactive strategies for detecting deception involving dyadic exchanges with the subject have proven to be more reliable (Dando & Bull, 2011; Granhag, Strömwall, & Hartwig, 2007; Vrij & Granhag, 2012). This is not surprising given that recent meta-analyses have shown that lie detection is more readily improved by increasing behavioral differences between liars and truth tellers than by informing lie-catchers of valid cues to deception (Bond & Hartwig, 2011). In light of these findings, the general CI protocol was merged with techniques from the research literature on detecting deception to produce the cognitive interview for suspects (CIS). The CIS allows for a non-judgmental approach to interviewing subjects in situations where it is not yet clear whether the subject will be honest or deceptive during the interview (Kassin, Goldstein, & Savitsky, 2003). The same principles that drive the memory-enhancement and communications aspects of the CI for co-operative victims and eyewitnesses are at work in the CIS. The subject is encouraged to generate large amounts of information before any challenge is made. This allows for a greater opportunity to observe inconsistent statements as well as any changes in demeanor from baseline (as observed during the rapport stage) should they occur. This approach reduces the likelihood that the investigator will challenge the subject pre-maturely based on any confirmatory bias (Hill, Memon, & McGeorge, 2008; Kassin, Dror, & Kukucka, 2013).

The CIS also employs two techniques from the regular CI for asking for information in ways that are unanticipated by the subject, namely drawing/sketching the story and re-telling the story

in reverse chronological order. It is logical that deceptive persons must use some of their limited cognitive resources to maintain the integrity of the false story and to monitor the interviewer's reactions to the story, whereas truthful persons need only to search memory. The sketch and reverse-recall elements of the CIS provide an opportunity to observe the subject's performance while carrying out these unexpected tasks with further elevated levels of cognitive load (McCormack, Ashkar, Hunt, Chang, Silberkleit, & Geiselman, 2009; Vrij, Leal, Mann, Warmelink, Granhag, & Fisher, 2010). It is important to recognize that performance "signs" of deception are red flags only (sometimes called "hot spots") and must be monitored throughout the entire interview by the interviewer toward making an accurate overall decision about truth versus deception (Geiselman, 2012). That is, some truthful persons will experience a heavy cognitive load to retrieve true memories and some deceptive persons will experience little cognitive load to confabulate false memories (Vrij, Leal, Granhag, Mann, Fisher, Hillman, & Sperry, 2009).

Step-by-Step Sequence of the CIS

The eight stages of the full CIS are:

Rapport/Introduction. As in the CI for co-operative witnesses, the interviewer first attempts to create rapport with the subject using casual conversation in a non-judgmental manner. In one study, prisoners who confessed during their police interviews reported that their interviewers had developed rapport with them whereas a dominating approach was met with resistance (Holmberg & Christianson, 2002). In addition, the interviewer will observe the subject's general demeanor during this exchange as a baseline. A change in demeanor later on could indicate deception.

Narrative. Research shows that the vast majority of persons put in a position of being deceptive choose to offer only the highlights of their story or a "bare-bones" account (Colwell, Hiscock-Anisman, Memon, Woods, & Michlik, 2006; Geiselman et al., 2011, 2013). The typical justification for such an abbreviated narrative is that to be more elaborate would appear as an attempt to convince the interviewer, or to "sell" the story (Colwell et al., 2006). In contrast, the elements of the CI leading up to the request for the narrative raise the expectation that the subject will be detailed in the narrative. More information provides a greater opportunity to produce conflicting details and/or details that are incriminating or known to be false, yet interviewers often attempt to control the interview rather than encouraging the suspect to talk

extensively (Snook, Luther, Quinlan, & Milne, 2012). To encourage this process, the interviewer should use "extenders" and other prompts to keep the narrative going as long as possible ("Really… tell me more about that.").

Drawing/Sketch. The interviewer's request for an illustration of the story following the narrative stage is unexpected by the subject. Research shows that unexpected requests can prove difficult for a subject who is being deceptive, in part because unexpected requests increase cognitive load (Vrij et al., 2009; Vrij et al., 2010). The request for an illustration should be presented to the subject as in the regular CI, as a means to clarify the narrative for greater understanding by the interviewer as well as to give the subject another opportunity to recall additional information. Deceptive persons are more likely than truthful persons to exhibit unusual difficulty in making the drawing/diagram, to leave out significant details from the narrative, produce more inconsistencies, and offer little, if any, additional new details compared with truthful subjects.

Follow-up, Open-Ended Questions. The follow-up, open-ended questions will be presented as information-gathering rather than as confrontational to maintain the momentum toward generating more information from the suspect. Deceivers typically answer these questions with minimal elaboration without offering much that is new in terms of details (Colwell, Hiscock-Anisman, Memon, Taylor, & Prewett, 2008). Truth tellers in contrast are likely to elaborate and provide additional information.

Reverse-Order Technique. When all of the scenes from the narrative have been exhausted with follow-up questioning as in the regular CI, the interviewer will introduce the reverse-order technique as another means for possibly jogging the subject's memory for additional details. Research shows that deceptive persons have unusual difficulty telling their fabricated stories backward compared with truthful subjects (McCormack et al., 2009; Vrij, Fisher, Mann, & Leal, 2009). Recalling a story backward increases cognitive load, and the deceptive subject's cognitive resources already are being strained to maintain the consistency of the story.

Challenge. At this point, the subject will be asked about inconsistencies, incriminating statements, and/or external incriminating evidence. None of these elements should be addressed prior to this point in the interview (Granhag, Strömwall, & Hartwig, 2007). Consistent with the regular CI, the interviewer should remain soft-spoken, respectful, and use pauses effectively to

maintain the focus on the subject. Given that rapport has been developed and the interview has been conducted in an information-gathering style using "teamwork," the interviewer should ask the subject to, "Help me understand this." The confrontation process should be conducted in a "drip" (piece by piece) manner rather than in attempt to overwhelm the subject with all of the incriminating information at once (Dando & Bull, 2011). This procedure increases the likelihood for additional inconsistent statements because it does not allow for a single comprehensive explanation from a deceiver at one time.

Review. The interview summary should be framed as in the regular CI as an opportunity for the subject to correct any inaccuracies and to recall additional facts. With suspects, the interviewer has the option to intentionally change a non-incriminating element of the subject's story to see if the subject spontaneously corrects the inaccuracy (Shafer, & Navarro, 2012). Deceptive persons are less likely than truthful persons to correct the inaccuracy, but rather quickly agree with the review, including the changed element of the story, in an attempt to end the interview as soon as possible.

Close. If the subject has appeared truthful, the interviewer will thank the subject for having co-operated. If the subject has appeared deceptive, the interviewer will express that s/he feels disappointed and disrespected (exploiting the connection established during the rapport stage). In the latter case, the interviewer will attempt to explain to the subject that it would be better for him/her to tell the truth now rather than later.

Empirical Test of the CIS

In the first empirical test of the CIS, 6 trained interviewers conducted interviews with 20 participants who were instructed to describe a recent autobiographical event and also separately to describe a completely fabricated autobiographical event (Geiselman, 2012). The stakes in this preliminary study were relatively low in that the participants could win fifty dollars if they convinced the interviewer that they were telling the truth, and they stood to lose fifty dollars if they failed. The interviewers rated the likelihood of the participants' truthfulness at each of the first six stages of the CIS protocol. The results showed that the interviewers were only slightly better than chance at assessing deception following the narrative stage (consistent with past research on detecting deception), but increased accuracy systematically throughout the remainder of the CIS to an almost perfect level of discriminability. These findings provide an encouraging

initial demonstration of the potential of the CIS protocol for assessing the likelihood of deception during investigative interviews. Further study of the CIS is warranted and welcomed.

Future Directions

A myriad of studies over the past two and a half decades has demonstrated clearly that the CI reliably enhances witness recollections under a variety of event and test conditions. While training on the CI thus far has been spotty with no coordinated effort by a national agency, numerous national and local law-enforcement agencies have sponsored training in several U.S. states and in several countries. We are committed to delivering this training which is sought and needed by investigators who must interview witnesses about important events.

With respect to future research, it is important to identify the limitations as well as the strengths of the CI for different populations and contexts. It is equally important, however, to then offer guidance and to seek solutions for those limitations. We believe the major areas of progress in the future will include (a) developing training programs for investigators to learn the procedures more effectively, (b) streamlining the procedures so that police can use them more efficiently in field situations where resources are often limited, (c) developing new component techniques to expand the CI, (d) refining the extension of the CI for suspect interviews (CIS), (e) exploring the utility of the CI in other (non-criminal) investigations, and (f) modifying and refining the CI for use with persons exhibiting various disabilities. To end this chapter on a positive note, we are happy to report that considerable progress has been made along each of these lines. Powell, Fisher & Wright (2005) have explored various methods to improve training. Davis et al. (2005) and Dando et al. (2009a, 2009b, 2011) have examined ways to streamline the CI for time-constrained situations. Geiselman (2012) has completed the first laboratory test of the CIS, and Morgan et al. (2011) have found a variant of the CI to lead to deception-detection accuracy rates above 80% in ecologically valid settings involving US Army personnel. Chapman and Perry (1995), Brock, Fisher, and Cutler (1999), and Roos (2007) have examined how the CI might be used to investigate auto accidents. Finally, Maras & Bowler (2010; 2012) have pursued workable modifications of the CI for use with persons with certain disabilities. We encourage others to advance the research on the CI protocol for investigative interviewing in these and other directions. We also encourage practitioners to contact us with your case experiences involving the CI.

References

Abbe, A. & Brandon, S.E. (2013). Building and maintaining rapport in investigative interviews. Police Practice and Research: An International Journal, August, DOI: 10.1080/15614263.2013.827835.

Anderson, R.C. & Pichert, J.W. (1978). Recall of previously unrecallable information following a shift in perspective. Journal of Verbal Learning and Verbal Behavior, 17, 1-12.

Artwohl, A. (2002). Perceptual and memory distortion during officer-involved shootings. FBI Law Enforcement Bulletin, October 2002; 18.

Bekerian, D. A. & Dennett, J. L. (1993). The cognitive interview technique: Reviving the issues. Applied Cognitive Psychology, 7, 275-298.

Bekerian, D. A. & Dennett, J. L. (1997). Imagery effects in spoken and written recall. In D. Payne & F. Conrad (Eds.), Intersections in basic and applied memory research (pp. 279-289). Mahwah, NJ: Erlbaum.

Berresheim, A. & Weber, A. (2003). Die Strukturierte Zeugenvernehmung und Ihre Wirksamkeit [Structured witness interviewing and its effectiveness]. Kriminalistik, 57, 757-771.

Bond, C.F. & Depaulo, B.M. (2008). Individual differences in judging deception: accuracy and bias. Psychological Bulletin, 134, 477-492.

Bond, C.F. & Hartwig, M. (2011). Why Do Lie-Catchers Fail? A Lens Model Meta-Analysis of Human Lie Judgments. Psychological Bulletin, 137, 643–659.

Boon, J. & Noon, E. (1994). Changing perspectives in cognition interviewing. Psychology, crime, & Law, 1, 59-69.

Bransford, J. D. & Franks, J. J. (1971). The abstraction of linguistic ideas. Cognitive Psychology, 2, 331-350.

Brock, P., Fisher, R.P., & Cutler, B.L. (1999). Examining the cognitive interview in a double-test paradigm. Psychology, Crime, & Law, 5, 29-45.

Brown, C. L. & Geiselman, R. E. (1990). Eyewitness testimony of mentally retarded: Effect of the cognitive interview. Journal of Police and Criminal Psychology, 6, 14-22.

Chapman, A. J. & Perry, D. J., (1995). Applying the cognitive interview procedure to child and adult eyewitnesses of road accidents. Applied Psychology: An International Review, 44, 283-294.

Collins, R., Lincoln, R., & Frank, M. G. (2002). The effects of rapport in forensic interviewing. Psychiatry, Psychology & Law, 91, 69-78.

Colwell, K., Hiscock-Anisman, C., Memon, A., Woods, D., & Michlik, P.M. (2006). Strategies of impression management among deceivers and truth-tellers: How liars attempt to convince. American Journal of Forensic Psychology, 24, 253-260.

Colwell, K., Hiscock-Anisman, C. K., Memon, A., Taylor, L., & Prewett, J. (2008). Assessment Criteria Indicative of Deception (ACID): an integrated system of investigative interviewing and detecting deception. Journal of Investigative Psychology and Offender Profiling, 4, 167-180.

Dando, C.J. & Bull, R. (2011). Maximizing Opportunities to Detect Verbal Deception: Training Police Officers to Interview Tactically. Journal of Investigative Psychology and Criminal Profiling, 8, 189-202.

Dando, C., Ormerod, T.C., Wilcock, R., & Milne, R. (2011). When help becomes hindrance: Unexpected errors of omission and commission in eyewitness memory resulting from change temporal order at retrieval? Cognition, 121, 416-421.

Dando, C., Wilcock, R., Behnkle, C., & Milne, R. (2011). Modifying the cognitive interview: Countenancing forensic application by enhancing practicability. Psychology, Crime & Law, 17, 491-511.

Dando, C., Wilcock, R., & Milne, R. (2009). The cognitive interview: Novice police officers' witness/victim interviewing practices. Psychology, Crime & Law, 15, 679-696.

Dando, C., Wilcock, R., Milne, R., & Henry, L. (2009a). The cognitive interview: The efficacy of a modified mental reinstatement of context procedure for frontline police investigators. Applied Cognitive Psychology, 23, 138-147.

Dando, C., Wilcock, R., Milne, R., & Henry, L. (2009b). A modified cognitive interview procedure for frontline police investigators. Applied Cognitive Psychology, 23, 698-716.

Davis, M. R., McMahon, M., & Greenwood, K. M. (2005). The efficacy of mnemonic components of the cognitive interview: Towards a shortened variant for time-critical investigations. Applied Cognitive Psychology, 19, 75-93.

Fisher, R.P., Brewer, N., & Mitchell, G. (2009). The Relation between Consistency and Accuracy of Eyewitness Testimony: Legal versus Cognitive Explanations. In T. Williamson, R. Bull, & T. Valentine (Eds.) Handbook of Psychology of Investigative Interviewing: Current Developments and Future Directions. John Wiley & Sons.

Fisher, R. P. & Geiselman, R. E. (1992). Memory-enhancing techniques in investigative interviewing: The cognitive interview. Springfield, IL: C.C. Thomas.

Fisher, R.P. & Geiselman, R.E. (2010). The cognitive interview method of conducting police interviews: Eliciting extensive information and promoting therapeutic jurisprudence. International Journal of Law and Psychiatry, 33, 321-328.

Fisher, R.P., Geiselman, R.E. & Amador, M. (1989). Field test of the Cognitive Interview: Enhancing the recollection of the actual victims and witnesses of crime. Journal of Applied Psychology, 74, 722-727.

Fisher, R. P., Geiselman, R.E., & Raymond, D.S. (1987). Critical analysis of police interviewing techniques. Journal of Police Science & Administration, 15, 177-185.

Fisher, R. P. & McCauley, M. L. (1995). Information retrieval: Interviewing witnesses. In N. Brewer & C. Wilson (Eds.) Psychology and policing, Hillsdale, NJ: Erlbaum. (pp. 81-99).

Fisher, R. P., Mello, E., & McCauley, M. L. (1999). Are jurors' perceptions of eyewitness credibility affected by the cognitive interview? Psychology, Crime and Law, 5, 167-176.

Fisher, R. P. & Schreiber, N. (2007). Interviewing protocols to improve eyewitness memory. In M. Toglia, R. Lindsay, D. Ross, & J. Reed (Eds.), The handbook of witness psychology: Volume One. Memory for events. Mahwah, NJ: Erlbaum Associates. (pp. 53−80).

Flexser, A. & Tulving, E. (1978). Retrieval independence in recognition and recall. Psychological Review, 85, 153-171

Force Science News (2011, #169). New position paper links cognitive interviewing to “fair, objective” OIS investigations. Force Science Institute: Mankato, MN.

Geiselman, R.E. (2010). Rest and eyewitness memory recall. American Journal of Forensic Psychology, 28, 65-69.

Geiselman, R.E. (2012). The cognitive interview for suspects (CIS). American College of Forensic Psychology, 30, 1-16.

Geiselman, R.E. & Callot, R. (1990). Reverse and forward order recall of script-based text. Journal of Applied Cognitive Psychology, 4, 141-144.

Geiselman, R.E., Elmgren, S., Green, C., & Rystad, I. (2011). Training laypersons to detect deception in oral narratives and exchanges. American Journal of Forensic Psychology, 32, 1-22.

Geiselman, R. E. & Fisher, R. P. (1997). Ten years of cognitive interviewing. In D. G. Payne & R. G. Conrad (Eds.), A synthesis of basic and applied approaches to human memory (pp. 291-310). Hillsdale, NJ: Erlbaum.

Geiselman, R.E., Fisher, R.P., Cohen, G., Holland, H.L. & Surtes, L. (1986). Eyewitness responses to leading and misleading questions under the cognitive interview. Journal of Police Science and Administration, 14, 31-39.

Geiselman, R. E, Fisher, R. P., Firstenberg, I., Hutton, L. A., Sullivan, S. J., Avetissian, I. V., & Prosk, A. L. (1984). Enhancement of eyewitness memory: An empirical evaluation of the cognitive interview. Journal of Police Science & Administration, 12, 74-80.

Geiselman, R.E., Musarra, E., Berezovskaya , N., Lustig, C., & Elmgren, S. (2013). Training laypersons to detect deception in oral narratives and exchanges - II." American Journal of Forensic Psychology, 31, 1-15.

Geiselman, R. E. & Padilla, J. (1988). Cognitive interviewing with child witnesses. Journal of Police Science and Administration, 16, 236-242.

George, R. C. & Clifford, B. R. (1992). Making the most of witnesses. Policing, 8, 185-198.

George, R. C. & Clifford, B. R. (1996). The Cognitive Interview - Does it work? In S. Lloyd-Bostock & G. Davies (Eds.), Psychology, Law and Criminal Justice: International developments in research and practice (pp.146-154). Oxford: de Gruyter.

Granhag, P. A., Strömwall, L. A. & Hartwig, M. (2007). The SUE technique: The way to interview to detect deception. ForensicUpdate, 88, 25-29.

Greenwald, A. G. (1970). Sensory feedback mechanisms in performance control: With special reference to the ideo-motor mechanism. Psychological Review, 77, 73-99.

Hill, C., Memon, A., & McGeorge, P. (2008). The role of confirmation bias in suspect interviews: A systematic evaluation. Legal & Criminological Psychology, 13, 357-371.

Hirn, D., Fisher, R. P., & Carol, R. N. (2012). Use of a hybrid interview method to retrieve memories created during decision. Paper presented at the meeting of the American Psychology-Law Society, San Juan, Puerto Rico.

Holmberg U. & Christianson, S. (2002). Murderers' and sexual offenders' experiences of Police interviews and their inclination to admit or deny crimes. Behavioral Sciences and the

Law, 20, 31-45.

Home Office (2002). Achieving best evidence in criminal proceedings: Guidance for vulnerable or intimidated witnesses, including children. London: Her Majesty's Stationery Office. (http://www.cps.gov.uk/publications/prosecution/bestevidencevol1.html - Access date January 31, 2005).

Inbau, F.E., Reid, J.E., Buckley, J.P., & Jayne, B.C. (2001). Criminal interrogation and confessions, 4th Ed.. Gaithersburg, Maryland: Aspen Publishers.

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, 42-52.

Kassin, S. M., Goldstein, C. J., & Savitsky, K. (2003). Behavioral confirmation in the interrogation room: On the dangers of presuming guilt. Law & Human Behavior, 87, 187-203.

Kebbell, M. R., Milne, R. & Wagstaff, G. F. (1999). The Cognitive Interview: A Survey of its Forensic Effectiveness. Psychology, Crime and Law, 5, 101-115.

Kebbell, M. R. & Wagstaff, G. F. (1996). Enhancing the practicality of the cognitive interview in forensic situations. Psycoloquy, 7(16), witness-memory.3.kebbell.

Koehnken, G., Milne, R., Memon, A., & Bull, R. (1999). The cognitive interview: A meta-analysis. Psychology, Crime and Law, 5, 3-27.

Kunst, M.J.J., Rutten, S., & Knijf, E. (2013). Satisfaction with the initial response and development of posttraumatic stress disorder symptoms in victims of domestic burglary. Journal of Traumatic Stress, 26, 111-118.

LaPaglia, J.A., Wilford, M.M., Rivard, J., Chan, J.C.K., & Fisher, R.P. (in press). The memorial benefits of the cognitive interview can also enhance witness suggestibility. Applied Cognitive Psychology, in press.

Larsson, A. S., Granhag, P. A., & Spjut, E. (2003). Children's recall and the Cognitive Interview: Do the positive effects hold over time? Applied Cognitive Psychology, 17, 203-214.

Leibowitz, H. W., Guzy, L., Peterson, E., & Blake, P.T. (1993). Quantitative perceptual estimates: Verbal versus nonverbal retrieval cues. Perception, 22, 1051-1060.

Lowndes, L. (2003). How to talk to anyone: 92 little tricks. McGraw-Hill Books: New York.

MacKinnon, D.P., O'Reilly, K.E., & Geiselman, R.E. (1990). Improving eyewitness recall for license plates, Applied Cognitive Psychology, 4, 129-140.

Maras, K. L. & Bowler, D. M. (2010). The cognitive interview for eyewitnesses with autism spectrum disorder. Journal of Autism and Developmental Disorders, 40, 1350-1360.

Maras, K. L. & Bowler, D. M. (2012). Context reinstatement effects on eyewitness memory in autism spectrum disorder. British Journal of Psychology, 103, 330-342.

McCauley, M. R. & Fisher, R. P. (1995). Facilitating children's recall with the revised cognitive interview. Journal of Applied Psychology, 80, 510-516.

McCormack, T., Ashkar, A., Hunt, A., Chang, E., Silberkleit, G., & Geiselman, R.E. (2009). Indicators of deception in an oral narrative: Which are more reliable? American Journal of Forensic Psychiatry, 30, 49-56.

McMahon, M. (2000). The effect of the enhanced cognitive interview on recall and confidence in elderly adults. Psychiatry, Psychology and Law, 7, 9-32.

Mello, E. W. & Fisher, R. P. (1996). Enhancing older adult eyewitness memory with the cognitive interview. Applied Cognitive Psychology. 10, 403-417.

Memon, A., Meissner, C.A., & Fraser, J. (2010). The cognitive interview: A meta-analytic and study space analysis of the last 25 years. Psychology, Public Policy, and Law, 16, 340-372.

Memon, A., Wark, L., Bull, R., & Kohnken, G. (1997). Isolating the effects of the cognitive interview techniques. British Journal of Psychology, 88 (2), 179-197.

Memon, A., Zaragoza, M., Clifford, B., & Kidd, L. (2010). Inoculation or antidote? The effects of cognitive interview timing on false memory for forcibly fabricated events. Law & Human Behavior, 34, 105–117.

Milne, R. (1997). Analysis and application of the cognitive interview. Volume 3: Discussion, References and Appendices. Unpublished Ph.D. Dissertation, University of Portsmouth, Portsmouth.England.

Milne, R. & Bull, R. (1996). Interviewing children with mild learning disability with the cognitive interview. In N. Clark & G. Stephenson (Eds.), Investigative and forensic decision making (pp. 44-51). Leicester: British Psychological Society.

Milne, R. & Bull, R. (2003). Does the cognitive interview help children to resist the effects of suggestive questioning? Legal & Criminological Psychology, 8, 21–38.

Milne, R., Clare, C. I. W., & Bull, R. (1999). Using the cognitive interview with adults with mild learning disabilities. Psychology, Crime and Law, 5, 81-99.

Morgan, A.M., Colwell, L.H., & Hazlett, G.A. (2011). Efficacy of forensic statement analysis in distinguishing truthful from deceptive eyewitness accounts of highly stressful events. Journal of Forensic Science, 56, 1227-1234.

National Institute of Justice (R.E. Geiselman & R.P. Fisher, 1985). Interviewing Victims and Witnesses of Crime. National Institute of Justice Research in Brief.

Pecher, D., Zeelenberg, R., & Barsalou, L.W. (2003). Verifying different-modality properties for concepts produces switching costs. Psychological Science, 14, 119-124.

People v. Shirley, 181 Cal. Rptr. 243 (1982).

Perfect, T. J., Wagstaff, G. F., Moore, D., Andrews, B., Cleveland, V., Newcombe, S., Brisbane, L-A., & Brown, L. (2008). How can we help witnesses to remember more? It's an (eyes) open and shut case**.** Law and Human Behavior, 32, 314-324.

Powell, M. B., Fisher, R. P., & Wright, R. (2005). Investigative interviewing. In N. Brewer & K. Williams (Eds.), Psychology and Law: An empirical perspective (pp. 11-42). New York: Guilford.

RAND Corporation (1975, October). The criminal investigation process (Vol. 1-3), Rand Corporation Technical Report R-1776-DOJ, Santa Monica, CA.

Roberts, W. T., & Higham, P. A. (2002). Selecting accurate statements from the cognitive interview using confidence ratings. Journal of Experimental Psychology: Applied, 8, 33-43.

Roos, C.R. (2007). An examination of investigative interviewing techniques using road crash incidents as stimuli. Unpublished PhD thesis, Queensland University of Technology.

Sanders, G.S. & Simmons, W.L. (1983). Use of Hypnosis To Enhance Eyewitness Accuracy: Does It Work? Journal of Applied Psychology, 68, 70-77.

Saywitz, K.J., Geiselman, R.E. & Bornstein, G.K. (1992). Effects of cognitive interviewing and practice on children's recall performance. Journal of Applied Psychology, 77, 744-756,

Schreiber, N. & Fisher, R. P. (2005). Police interviewing techniques: Types of questions, positive and negative techniques in a South Florida sample. Paper presented at the American Psychology-Law Society, La Jolla, CA.

Shafer, J.R. & Navarro, J. (2012). Advanced interviewing techniques (2nd Ed). Charles Thomas Publishers: Springfield Il.

Sharman, S.J. & Powell, M.B. (2013). Do cognitive interview instructions contribute to false beliefs and memories? Journal of Investigative Psychology and Offender Profiling, 10, 114-124.

Snook, B., Luther, K., Quinlan, H., & Milne, R. (2012). Let 'em talk! A Field study of police questioning practices of suspects and accused persons. Criminal Justice and Behavior, 39, 1328-1339.

Snook, B. & Keating, K. (2010). A field study of adult witness interviewing practices in a Canadian police organization. Legal and Criminological Psychology, 16, 160-172.

Sydeman, S.J., Cascardi, M., Poythress, N.G., Ritterbrand, L.M. (1997). Procedural Justice in the Context of Civil Commitment: A Critique of Tyler's Analysis. Psychology, Public Policy & Law, 3, 207-221.

Tulving, E. & Thomson, D. M. (1973). Encoding specificity and retrieval processes in episodic memory. Psychological Review, 80, 352-373.

Tulving, E. (1974). Cue-dependent forgetting. American Scientist, 62, 74-82.

Vrij, A., Fisher, R., Mann, S., & Leal, S. (2009). Increasing cognitive load in interviews to detect deceit. In B. Milne, S. Savage, & T. Williamson (Eds.), International developments in investigative interviewing (pp. 176-189). Uffculme: Willan Publishing.

Vrij, A., & Granhag, P.A. (2012). Eliciting cues to deception and truth: What matters are the questions asked. Journal of Applied Research in Memory and Cognition, 1, 110-117.

Vrij, A., Leal, S., Granhag, P. A., Mann, S., Fisher, R. P., Hillman, J., & Sperry, K. (2009). Outsmarting the liars: The benefit of asking unanticipated questions. Law and Human Behavior, 33, 159-166.

Vrij, A., Leal, S., Mann, S., Warmelink, L., Granhag, P., & Fisher, R. (2010). Drawings as an innovative and successful lie detection tool. Applied Cognitive Psychology, 24, 587-594.

Westera, N.J., Kebbell, M.R., & Milne, R. (2011). Interviewing rape complainants: Police officers' perceptions of interview format and quality of evidence. Applied Cognitive Psychology, 25, 917-926.

Wilson, J.F. & Geiselman, R.E. (2011). Training for the aftermath of an officer involved shooting." The ILEETA Use of Force Journal, 11, 24-28.

Whitten, W. & Leonard, J. (1981). Directed search through autobiographical memory. Memory & Cognition, 9, 566-579.

Yuille, J. C., Hunter, R., Joffe, R., & Zaparnuik, J. (1993). Interviewing children in sexual abuse cases. In G. S. Goodman & B. L. Bottoms (Eds.), Child victims, child witnesses. Understanding and improving testimony (pp. 95-115). New York: Guildford Press.

Zimmerman, L.A. Effects of stress on police and citizen eyewitness recall. The Canadian Journal of Police and Security Services, 1, 377-380