Chapter 4

Interviewing witnesses and victims

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Police investigators agree that eyewitnesses usually provide central leads in their investigations (Berresheim and Weber, 2003; George and Clifford, 1992; Kebbell and Milne, 1998). Police lament, however, that witnesses rarely provide sufficient information (Kebbell and Milne, 1998). How might police improve the quality and quantity of evidence elicited from eyewitnesses? Unfortunately, police cannot control the viewing conditions or the quality of the witness's memory. Of the various factors that police can control, the most productive approach is to concentrate on how they interview witnesses.

We open this chapter by describing a typical police interview of a cooperative witness. We then describe a scientifically based interviewing protocol that has been developed to enhance witness recall: the cognitive interview (CI). The CI has been tested many times, in both laboratory studies and in real-world investigations, and we describe these validation studies, with special attention to police reactions to conducting CI interviews. Finally, the chapter closes with a view toward the future, where we recommend areas of research and application.

Current police interviewing practices

Although the police interview is a central element in eliciting complete, detailed, accurate witness reports, the police are not very proficient at interviewing cooperative witnesses. Two decades ago Fisher *et al.* (1987) and George and Clifford (1992) described typical interviewing protocols used by American and British police, respectively, and, to say the least, the results were discouraging. Following a perfunctory effort to establish

rapport, police investigators 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 conducted the remainder of the interview as a series of direct, short-answer questions, e.g. how tall was he? how much did he weigh? Frequently, interspersed among these questions were leading or suggestive questions, e.g. was he wearing a red shirt? Unfortunately, little apparent progress has been made in the past two decades as similar patterns of poor interviewing procedures have been found in recent interviews conducted by German (Berresheim and Weber, 2003), American (Schreiber and Fisher, 2005) and Canadian police (Snook and Keating, under review). Studies conducted in Finland (Korkman *et al.*, 2006), Sweden (Cederborg *et al.*, 2000), and Norway (Fahsing and Rachlew, 2009) indicate that the same pattern holds true for the Nordic region.

The preceding description characterised police interviews; however, our experience suggests that the same interviewing style is used by many other non-police investigators (e.g. accident investigators, fire marshals). The common denominators marking all of these interviews are:

1. The interviewer has a predetermined set of topics or questions that guides the interview.

2. The interviewer asks a specific question about each of the items in the predetermined set.

3. The interviewer generally controls the flow of information, and does much of the talking (and thinking) thereby relegating the witness to playing a passive role, namely to answer the interviewer's questions.

That so many different investigative interviewers follow the same pattern suggests that the pattern is intuitive and in some sense natural. Another possible explanation is that either all institutions provide the same kind of training – which seems unlikely – or institutions provide minimal training, and so interviewers resort to their natural intuitions. The problem with such intuitively guided 'natural' interviews is that they are ineffective: they elicit less information than is potentially available and they sometimes entice witnesses to provide incorrect descriptions. Improving the quality of interviews, then, will require something more than an intuitive approach. We describe here other approaches to interviewing that are less intuitive but more scientifically based, and which, most importantly, elicit more witness information without distorting the witness's memory.

Of the various approaches to interviewing, the best known are the Cognitive Interview (CI: Fisher and Geiselman, 1992), Conversation Management (Shepherd, 1988), the *Memorandum of Good Practice* (DoH and

HO, 1992) and the National Institute of Child Health and Human Development (NICHD) protocol (Orbach *et al.* 2000). Each of these protocols is composed of many specific techniques that have generally been found to (1) increase the amount of information gathered, and/or (2) decrease the likelihood of recalling an event incorrectly. Common to all of these protocols are several core elements, including: (1) developing rapport with the witness; (2) asking open-ended questions primarily; (3) asking neutral questions and avoiding leading or suggestive questions; and (4) funnelling 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 cognitive interview

The following is a thumbnail sketch of the CI (for a complete description, see Fisher and Geiselman, 1992). The core elements of the CI are organised around three psychological processes: social dynamics, memory and cognition, and communication.

Social dynamics

The success of police interviews reflects, in part, how well the witness and interviewer interact with each other. Ideally, the interviewer must gain the witness's trust as someone who is concerned about the personal welfare of the witness and is not seen only as an evidence-gatherer. Second, the interviewer must convince the witness to generate a rich narrative description of the critical event and not merely provide brief answers to the interviewer's questions.

Developing rapport

Witnesses, and especially victims, are often asked to give detailed descriptions of intimate, personal experiences to police officers who are complete strangers. Police interviewers should invest time at the outset of the interview to develop meaningful, personal rapport with the witness (Collins *et al.*, 2002), a feature often absent in police interviews (Fisher *et al.*, 1987). Establishing rapport entails exploring links that bind the interviewer and the witness at a personal level, e.g. shared values, experiences and emotions, and especially those related to the critical event.

Active witness participation

The witness has extensive first-hand information about the target event. Therefore the witness, and not the interviewer, should be doing most of the mental work during the interview. In practice, however, police

investigators often dominate the interview by asking many questions and by asking questions that elicit only brief answers (Fisher *et al.*, 1987). To compound the problem, police interviewers often discourage witnesses from participating actively by interrupting them frequently. Interviewers can assist witnesses to take more active roles by: (1) explicitly instructing them to do so; (2) asking open-ended questions; and (3) not interrupting witnesses during their narrative responses.

Memory and cognition

Both the witness and the interviewer are engaged in demanding cognitive tasks: the witness is attempting to recall and describe in detail a complex event; the interviewer is listening to and noting the witness's response and generating and testing hypotheses about the crime. Because these tasks are demanding, the witness's and the interviewer's cognitive resources must be used efficiently.

Context reinstatement

Retrieving information from memory is most efficient when the context of the original event is recreated at the time of recall (Tulving and Thomson, 1973). Interviewers should therefore instruct witnesses to mentally recreate their physiological, cognitive and emotional states that existed at the time of the original event. Interviewers might instruct their witness, for instance, to think back about their thoughts and feelings when they originally experienced the crime.

Limited mental resources

Both the witness and the interviewer have only limited mental resources to process information and are easily overloaded by multi-tasking (Kahneman, 1973). Interviewers can minimise overloading witnesses by refraining from asking questions while witnesses are searching through their memories and, in general, by asking fewer, but more open-ended, questions. Asking fewer questions and encouraging witnesses to narrate their story also makes the interviewer's task easier. Interviewers can also promote more efficient use of witnesses' limited mental resources by encouraging them to close their eyes when recalling (Bekerian and Dennett, 1993).

Witness-compatible questioning

Each witness perceives the event somewhat differently; therefore, interviewers should tailor their questions to each particular witness instead of asking all witnesses the same set of questions. Interviewers often violate this rule by using a standardised checklist to guide their questioning of all witnesses (Fisher *et al.*, 1987). Similarly, even an individual witness's

thoughts about the crime will vary over the course of the interview, sometimes drawing on one mental image of the crime (e.g. the perpetrator) and at other times drawing on another mental image (e.g. the getaway car). Interviewers should be sensitive to the witness's currently active mental image and ask questions related only to that image. Asking questions that are not compatible with the witness's current image will yield less informative answers.

Multiple and varied retrieval

The more often witnesses search through their memories about the crime, the more new details they will recall. Interviewers can make use of this principle by (1) asking the witness to describe the critical event several times within the interview, and (2) interviewing the witness on two or more occasions. If witnesses attempt to recall the target event repeatedly, they should be directed to think about the event in various ways, since different retrieval probes may activate different aspects of a complex event (Anderson and Pichert, 1978). For instance, a witness might initially be asked to describe what he/she saw and then to describe what he/she heard or felt.

Minimising guessing

Witnesses will recall more accurately if they refrain from guessing (Koriat and Goldsmith, 1996). Therefore interviewers should explicitly instruct witnesses not to guess, but, preferably, to indicate that they 'don't know'. Furthermore, interviewers should not apply social pressure on witnesses or otherwise encourage them to answer questions if they are uncertain. These principles are particularly important when interviewing children (Ceci and Bruck, 1995).

Minimising constructive recall

Witnesses may construct memories of a crime by incorporating information conveyed by the interviewer based on his or her verbal or non-verbal behaviour (Ceci and Bruck, 1995). Interviewers should therefore be careful about not leaking information to witnesses either non-verbally (e.g. smiling or paying increased attention when the witness makes a particular statement) or verbally by asking leading or suggestive questions. This is of particular concern when interviewing children, who may be highly suggestible (Ceci and Bruck, 1995). For more on children as witnesses, see Chapter 7 in the present volume.

Communication

For police interviews to be effective, investigators must communicate their professional, investigative needs to the witness. Witnesses must also

communicate their knowledge of the crime to the investigator. Ineffective communication will lead witnesses to withhold valuable information or to provide irrelevant, imprecise and/or incorrect answers.

Promoting extensive, detailed responses

Witnesses sometimes withhold information because they do not know what is relevant for a police investigation. To minimise witnesses' withholding information, interviewers should instruct witnesses to report everything they think about, whether it is trivial, out of chronological order or even if it contradicts a statement made earlier. However, this should not be taken as a licence to guess, as some people mistakenly believe (Memon *et al.*, 1997).

Non-verbal output

Interviewers and respondents often exchange ideas using only the verbal medium. Some people, however, are more expressive non-verbally, and some events are better described non-verbally (Leibowitz *et al.*, 1993). Interviewers should make use of non-verbal methods to assist witnesses to express their knowledge. For instance, witnesses may be able to communicate their knowledge of the spatial layout of the crime better by drawing a sketch than by describing the room verbally.

Flexibility within the cognitive interview

The CI should not be thought of as a recipe with a fixed set of questions and instructions, but rather as a toolbox of techniques, only some of which will be used in any specific interview. Furthermore, many of the techniques will have to be adapted to meet the demands of the specific interview. Whether or not the CI interviewer uses a particular component technique and how he/she implements the technique depends on a variety of factors, including the amount of time available to conduct the interview, the conditions of the interview and whether or not the witness responds favorably to the technique. If there is not ample time to implement all of the techniques, then the interviewer may opt to delete some of the time-consuming techniques. For instance, the CI can be shortened, with relatively little loss of information, by not implementing the varied retrieval technique (e.g. asking witnesses to describe the event in reverse order after having described it chronologically) (Davis *et al.*, 2005). Likewise, if the interview is conducted immediately after the crime and at the crime scene, there is little need to reinstate the original context. Finally, certain techniques may not work with some individuals. For instance, some witnesses may be uncomfortable closing their eyes. In such a case, the interview can either omit or modify the instruction, e.g. by

instructing witnesses to keep their eyes open, but to focus on a blank field (e.g. a table, the floor).

The skill of conducting an interview is precisely to know which techniques can be implemented, given the specific conditions of the interview, and how best to implement the techniques. This flexibility and the concomitant decision-making are advantageous yet costly. The opportunity to select, modify and adapt the techniques to meet the unique needs of a particular interview is one of the strengths of the CI as it allows the interviewer to analyse the problem creatively and to tailor the interview for maximum efficiency. There is a cost in making these adjustments, however, in that the interviewer must be more fully engaged in the interview process and must make more on-line decisions. As a consequence of the CI's greater complexity and flexibility, it is more difficult to learn and to implement, but it yields considerably more information – which, after all, is the goal of the interview.

The ability to omit or modify the various component techniques implies that the CI is not a holistic entity that is either conducted or not conducted. Rather, one should think of the CI as a general approach that contains many techniques from which the interviewer selects, depending on the situation. Some people mistakenly think of the CI as a recipe, so that failure to use all of the component techniques means that they have not used the CI. For example, some British police have voiced the concern that time pressure often does not allow them to conduct the 'complete cognitive interview' (Kebbell et al., 1999). This type of all-or-nothing approach to the CI is misguided, as it was never intended to be used in a robotic fashion. To us, this frustration of not being able to use the 'complete cognitive interview' is comparable to physicians expressing concern that they cannot implement all of their medical knowledge when treating a particular patient. The effective interviewer (or physician) knows which of the various tools at his/her disposal are appropriate for the particular task, knows how to adapt them for the case at hand and uses only those tools that are required.

Empirical testing of the cognitive interview

Laboratory evaluations of the cognitive interview

The CI has been examined in close to 100 laboratory tests, many of which were conducted in the US, England, Germany and Australia. Many of these studies have been reviewed elsewhere in the past few years (for recent reviews see Fisher and York, 2009; Holliday et al., 2009; for a meta-analysis see Kohnken et al., 1999) and so we shall summarise here the general findings up to 2005, and then describe in more detail the most recent studies (2005–present). In these laboratory tests, volunteer wit-

nesses observed either a live, non-threatening event or a videotape of a simulated crime. Several hours or a few days later, the witnesses participated in a face-to-face interview that either conformed generally to the component techniques of the CI (for brevity, we refer to this as 'the CI') or was a control interview (modelled after a 'standard' police interview or a 'structured interview', which incorporates generally accepted principles of interviewing). Across these studies, the CI has typically elicited between 25 and 50 per cent more correct statements than standard or structured interviews. Furthermore, the effect is extremely reliable: of the 55 experiments in Koehnken *et al.*'s meta-analysis, 53 experiments found that the CI elicited more information than did the comparison interview (median increase = 34 per cent). Equally importantly, accuracy (as measured by the proportion of all witness statements that were correct) was as high or slightly higher in the CI interviews (accuracy rate = 0.85) than in the comparison interviews (0.82). The basic finding, that the CI elicits considerably more information than a standard police interview, is very robust: it holds across types of event (crimes and accidents), types of witness (children, young adults and the elderly; 'normal' and cognitively impaired) and types of test environment (immediate and delayed). We find it interesting that, although some events and witnesses obviously have better cognitive skills than others, the advantage of the CI (v. conventional interviews) is approximately the same across different events and people.

More recent laboratory research (2005–present) examining the CI can be grouped into three areas: (1) effectiveness of the CI in different populations; (2) effectiveness of the CI under different witness behavioural states (e.g. emotional arousal) or traits (e.g. hypnotisability); and (3) relationship between the CI and reality monitoring.

Older adults

Two studies have extended the research on the CI within an older adult population (60 years or older). Wright and Holliday (2007) compared the CI and a modified cognitive interview (which omitted the varied retrieval component) to a structured interview, and found that both versions of the CI increased correct recall, without an increase of incorrect or confabulated statements. This study also improved on earlier research by using a more ecologically valid measure of witness recall. In most studies, witness recall is scored for anything the witness reports, whether it is investigatively relevant or not. In the present study, police officers watched the stimulus event and provided the researchers with a list of details they considered important in a real investigation, and only those investigatively relevant items were scored. We expect the police community to be very receptive to the present study, as it demonstrated the value of the CI to enhance recall of investigatively relevant events. A second

study, by Dornburg and McDaniel (2006), further extended the research with older people by showing that the CI was beneficial (more correct statements without an accompanying increase in false or confabulated statements) even after a delay of three weeks.

Witness behavioural states/traits

A witness's behavioural state (e.g. emotional arousal) is important and may affect both the initial encoding of the crime and also later recall. High arousal at initial encoding leads to better recall of central details but poorer recall of peripheral details (labelled the focus effect: Christianson, 1992). Later, at the time of the interview, recall is enhanced if the witness's original emotional state is recreated (labelled mood-dependent memory effect: Christianson, 1992). How might the CI be influenced by the witness's emotional state? Ginet and Verkampt (2007) manipulated the witness's arousal level (high v. low) and found that the CI elicited more correct central and peripheral details, regardless of the level of arousal. Furthermore, the CI was effective regardless of the witness's arousal level when initially perceiving the event. However, the level of arousal induced by Ginet and Verkampt may not reflect the same level an actual witness may experience in a real-life situation. Therefore future research using different arousal manipulations should be conducted to determine the generalisability of these findings.

Hypnotisability may also affect the interviewing process. Some re-searchers and clinicians have raised questions about the distinction between the CI techniques (e.g. context reinstatement) and hypnosis. This is of concern because research has shown that the reliability of statements given by witnesses under hypnosis is reduced. Whitehouse et al. (2005) showed that the ability to be hypnotised was associated with the recall of erroneous and confabulatory statements for those who received either hypnosis or the CI, thus suggesting that some of the CI techniques may invoke hypnotic-like processes in hypnotisable people. Only two other studies have compared the CI and a hypnosis interview (Dasgupta et al., 1994–5; Geiselman et al., 1985). These two studies revealed that the CI did not increase the recall of erroneous or confabulatory statements compared to a hypnosis interview. Because the findings of Whitehouse et al. contradict those found in the literature they should be interpreted with caution until more research is conducted.

Reality monitoring

Witness recollection may be the product of either observing an event or imagining the event, and investigators must distinguish between the two. One theoretical approach toward that end is the reality monitoring framework, which proposes that memories based on experienced events possess more perceptual details (e.g. sounds, smells), contextual informa-

tion (e.g. when and where the event occurred) and affective information (e.g. one's feelings during an event), whereas memories based on internal processes contain more cognitive operations (e.g. thoughts and reasoning: Johnson *et al.*, 1993). Criteria based on the reality monitoring approach have been developed and used successfully to distinguish between experienced and imagined events. One concern, however, was whether these criteria would still be able to distinguish between perceived and imagined events if witnesses were interviewed with a CI. Larsson and Granhag (2005) therefore allowed children to see an event or to make up a story about the event and then interviewed them with a CI or a structured interview. The results showed that (1) the CI elicited more correct information than the structured interview, and (2) the reality monitoring framework, although imperfect, could still be used to discriminate between children who experienced versus imagined an event, even when tested with the CI. Thus the CI was effective as a memory-enhancer and did not interfere with the diagnostic value of reality monitoring.

Summary of laboratory findings

Recent laboratory research continues to support the CI, as it improves the recall of correct information while maintaining accuracy. The benefits of the CI were demonstrated across varying populations (e.g. older adults) and varying behavioural states (i.e. emotional arousal) of witnesses. Lastly, the research provides support for applying the reality monitoring approach with witnesses interviewed with the CI.

Although the CI toolbox has been found to be beneficial in laboratory studies, practitioners are more concerned with how training in these CI components fares at eliciting information from witnesses in actual criminal and accident investigations. The effectiveness of training in the CI can be examined from two compatible, but different, perspectives. First, training can be viewed as effective if investigators successfully implement the techniques in interviews conducted post-training. Second, training can be deemed effective if interviews conducted post-training elicit more information that assists with solving cases than those conducted prior to or without training. We examine next the research on the effectiveness of CI training on these two outcomes.

Evaluations of the cognitive interview in 'real-world' investigations

Successful implementation of CI techniques post-training

Some have concluded that training in the CI is not very effective at increasing the use of the CI in actual criminal investigations (Dando and Milne, 2009). This conclusion is based upon past research which has found that investigators report difficulty with and often fail to implement some

of the CI components following training (Clarke and Milne, 2001; Dando *et al.*, 2008, in press; Kebbell *et al.*, 1999; Wright and Holliday, 2005). However, this conclusion appears to be based on the assumption that successful implementation of the CI requires the use of all components. As we have stated earlier, the CI should not be thought of as a recipe that must be implemented holistically in order for the interview to be deemed a 'CI' (see also Fisher, in press; Fisher and York, 2009). Rather, an advantage of the CI is the flexibility available to the interviewer who can determine when, and if, specific components would be beneficial for eliciting more information from the witness. Interpreting the results of previous field studies from this perspective provides a much more promising look as to the effectiveness of CI training.

Researchers have found that those who do not receive formal training in the CI components do not intuitively incorporate these components into their interviewing techniques (Berresheim and Weber, 2003; Fisher *et al.*, 1987; Myklebust and Alison, 2000; Schreiber and Fisher, 2005; Snook and Keating, under review; Wright and Alison, 2004). However, following training in the CI, investigators use some of the CI components in 17 to 62 per cent of interviews (Clarke and Milne, 2001; Wright and Holliday, 2005), although the likelihood of using any specific component varies. Specifically, investigators are more likely to use rapport development (Clarke and Milne, 2001; Dando *et al.*, 2008; Kebbell *et al.*, 1999), uninterrupted recall (Clarke and Milne, 2001; Dando *et al.*, 2008), encouragement to report everything (Clarke and Milne, 2001; Kebbell *et al.*, 1999) and witness-compatible questioning (Clarke and Milne, 2001; Kebbell *et al.*, 1999). In contrast, other CI components are not often used following training. These infrequently used components include context reinstatement (Clarke and Milne, 2001; Dando *et al.*, 2008) and the varied retrieval techniques of changing temporal order and changing perspective (Clarke and Milne, 2001; Dando *et al.*, 2008; Kebbell *et al.*, 1999). Recent evaluations of novice investigators' use of the CI in the UK support these findings (Dando *et al.*, in press). Novice investigators were successful in applying the free recall and rapport building components; however, they infrequently incorporated most other components of the CI (e.g. witness compatible questioning, report everything, context reinstatement, concentration, minimise guessing; Dando *et al.*, in press).

Although this research has indicated that investigators often do not implement all CI components following training, we are encouraged by the findings that even brief training in the CI (e.g. four hours) results in implementing some components of the CI in subsequent interviews. However, even though the results of these field studies suggest that training in the CI is effective at increasing the use of some CI components in 'real-world' interviews, the most important validation of CI training is whether it assists investigators in obtaining more information from witnesses and ultimately in solving cases.

Eliciting more information from interviewees

Fisher *et al.* (1989) provided experienced investigators with a brief training session in the CI consisting of four hours of lectures/demonstrations in a classroom setting plus one hour of feedback conducted privately. They found that following this training, investigators elicited 47 per cent more information from witnesses compared to interviews they had conducted prior to training. In addition, these post-training interviews generated 63 per cent more information than interviews conducted by other untrained investigators. George and Clifford (1992, 1996) examined the interviews conducted by British police officers who received two days of training in the CI in comparison to interviews conducted by untrained police officers. The results indicated that officers trained in the CI elicited 55 per cent more information from their witnesses compared to the untrained officers.

Not only is there evidence suggesting that training in the CI assists investigators with being better information gatherers, there are several anecdotal examples of situations in which interviews conducted by investigators trained in the CI assisted with solving real-world cases including kidnapping, child molestation and terrorism (Fisher and York, 2009; Geiselman and Fisher, 1997). Two federal United States agencies (the Bureau of Alcohol, Tobacco, and Firearms and the National Transportation Safety Board) have reported successes in solving cases following training in the CI. In one situation, use of CI components resulted in recollections of a criminal event that occurred 34 years previously which were later corroborated by police records established at the time of the crime (Fisher and York, 2009). While these examples support the CI components as effective interviewing tools, we acknowledge that this is simply anecdotal evidence, which is subject to many biases. More reliable conclusions may be drawn from empirical studies conducted with trained law enforcement officers and other investigators.

To our knowledge, no published study has examined directly whether training in the CI influences the closing rates of criminal investigations. Research of this kind would be extremely beneficial to determine whether the CI is effective at eliciting more information that assists with solving cases and administering justice. A good example of how such a project should be developed is Pipe *et al.*'s (2008) examination of another interviewing protocol, that of the NICHD. The NICHD protocol is intended for interviewing children; however, it has several elements in common with the CI.

Pipe *et al.* (2008) evaluated the outcomes of 1,280 suspected child abuse cases investigated between 1994 and 2000. Of these cases, 551 were investigated prior to interviewers being trained in the NICHD protocol and 729 were conducted following intensive training in the protocol. Cases in which the investigators used the NICHD protocol were 1.52 times more likely to result in charges being filed against the suspect compared

to the pre-training interviews. Although there was no difference in the likelihood of a suspect pleading guilty across the NICHD and pre-training investigations, 94 per cent of the cases incorporating the NICHD protocol that went to trial resulted in a conviction of the defendant whereas only 54 per cent of cases that went to trial pre-training resulted in conviction.

Although these results do not speak directly to the efficacy of training in the CI for solving cases, they suggest that components of the CI that are incorporated in the NICHD interviewing protocol may be beneficial in assisting investigators to solve crimes and clear their caseloads. Of course, there are significant differences between the NICHD interviewing protocol and training in the CI so caution must be taken when making such inferences, but we are confident that a similar pattern of results would emerge once such an evaluation was conducted. We hope that such a study on the effectiveness of training in the CI components will be conducted in the near future.

Future directions

Almost all of the research on the CI thus far has attempted to validate the procedure, either in different locations (laboratory and field studies), with different kinds of witness (healthy adults, children and the elderly; the cognitively impaired; American, German or Brazilian), with different events (crime, accidents, medical examinations) or under different test conditions (short or long retention interval). Given the almost uniform success of the CI across these variations, it appears that we have reached a saturation point and additional laboratory validation tests will provide only marginal value. As such, we recommend that, rather than conducting yet one more laboratory validation study, researchers explore other approaches. Specifically, we recommend that researchers (1) add new components to the CI and (2) examine the conditions under which each of the current components works most and least effectively leading to developments of how the techniques might be adapted for different situations. As an example of the first goal, researchers may examine the utility – and potential costs – of showing witnesses photographs (or three-dimensional models) of the crime or accident scene. Such photographs or models might serve to enhance memory by reinstating the context of the original event, or it might facilitate communication by providing a non-verbal medium to convey the witness's knowledge. There may, however, be costs associated with providing such implements, as (1) altered (and unaltered) photographs sometimes have been associated with increased fabrication and elevated confidence (e.g. Garry and Gerrie, 2005), and (2) anatomically correct dolls sometimes promote false sexual allegations in children (see Pipe and Salmon, 2009, for a review). Assuming that providing photographs and models can enhance recollec-

tion or reporting without any costs, we would still need to determine how best to employ such a technique. Should we provide these implements at the beginning of the interview or only after the witness has already provided an unassisted free narrative? What shall we do if the witness's (pre-implement) description contradicts information contained in the photograph or model? Evaluating these and other novel questions may serve to enhance our ability to retrieve accurate information from witnesses.

A second recommended approach is to examine the conditions under which the current components of the CI work most and least effectively, and how they might be adapted to various situations. A good example of such work is Davis *et al.* (2005) who showed that time-consuming elements of the CI (e.g. varied retrieval) can be excised at minimal cost when there is insufficient time. Certainly, other components of the CI function more effectively or are more costly under some conditions (or with some witnesses) than others. Knowing the relative benefits and costs of the various components would provide guidance to interviewers about when to use the various techniques. A cousin of this approach is to examine how current techniques might be adapted to sub-optimal conditions, for instance, if too few police are available to interview a large group of victims or witnesses (e.g. at a sporting event riot). Gabbert *et al.* (2009) found that, rather than wait for police to interview everyone – which might take days or weeks, during which time witnesses would certainly forget detailed information – a self-administered version of the CI, which could be given to large numbers of witnesses immediately, can be used to help secure information and inoculate against forgetting. Certainly, there is much innovative research that might be done by creative researchers. We leave it to the reader's imagination to develop novel, effective methods to improve on our ability to collect witness information.

The development and testing of new procedures for eliciting additional information from interviewees will benefit greatly from close interactions between scientists and practitioners. This 'develop-and-test' model relies upon direct collaboration between those developing procedures (i.e. scientists) and those evaluating and implementing those procedures (i.e. practitioners; Sherman, 2006). In other areas of public policy and policing, research conducted using this 'develop-and-test' approach is highly productive (Gottfredson, 1987; Lipsey, 1995; Sherman, 2006; Weisburd and Green, 1995). However, this type of collaborative model is limited in the investigative interviewing literature with only a handful of such studies being conducted (e.g. Clarke and Milne, 2001; George, 1991; Kebbell *et al.*, 1999).

Collaboration between scientists and practitioners would benefit both disciplines and our understanding of investigative interviewing at large, as both bring unique perspectives to the task of interviewing cooperative

witnesses. Scientists have a detailed knowledge of the mental processes that influence witness reports including both cognitive and social dynamics, such as those that comprise the cognitive interview techniques. However, scientists often do not have a detailed understanding of the practical problems and implementation concerns of those using interviewing techniques on a daily basis. On the other hand, the practitioners are fully aware of the limitations of the interviewing environment, such as limited time for conducting interviews; however, they have restricted knowledge of the formal theories of the psychological processes that underlie witness reports. In the typical 'arm's length, you-design-and-we-evaluate' model (Sherman, 2006) that dominates the research on investigative interviewing, the field is left with two separate research programmes. The scientists focus on developing interviewing procedures that enhance investigative reports without much, if any, insight and direction from the limitations of the 'real-world' environment. The practitioners, on the other hand, focus on evaluating interviewing procedures that are currently implemented or those suggested by scientists without much, if any, direction from those who developed the procedures or have extensive knowledge in the psychological processes behind witness reports.

Sherman (2006) and Ross and Malpass (2008) discuss the pitfalls of the 'arm's length' model in relation to eyewitness identification procedures and the controversy erupting from a field evaluation of sequential, double-blind line-ups conducted in Illinois (Mecklenburg, 2006). They conclude that a major flaw in the Illinois study was the failure to successfully include eyewitness memory scientists in the evaluation. Although scientists were included in the analysis of the data, the lack of full understanding of scientific principles by the evaluators during the design and implementation phases limited the interpretability of the study and resulted in an evaluation that is widely viewed as uninformative (Schacter *et al.*, 2008; Wells, 2008).

In contrast, the collaborative 'develop-and-test' model has consistently proven to be effective in producing improved procedures and programmes within the justice system including programmes for protecting children of high-risk mothers (Olds *et al.*, 1986), reducing juvenile delinquency recidivism (Lipsey, 1995), treating sex offenders (Losel and Schmucker, 2005) and reducing crime rates (Petrosino and Soydan, 2005; see Sherman, 2006, for a discussion).

We believe that developing more effective investigative interviewing procedures would benefit dramatically from focusing on the 'develop-and-test' model. In fact, some of our recommendations above (using models/photos) stem from this type of collaborative venture. We encourage both the *developers* (i.e. scientists) and the *evaluators* (i.e. practitioners) to work together to determine the most effective investigative interviewing tools. Scientists should take into consideration the needs and practical

issues of the practitioners when developing programmes and those practitioners evaluating the success of interviewing procedures should be certain to include those scientists who developed the procedures to ensure that the programmes are being implemented properly. A transition from the 'arm's length' to the 'develop-and-test' model will only serve to enhance the efficiency of investigative interviewing in the future.

Further reading

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