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Protecting Eyewitness Evidence: Examining the Efficacy of a Self-Administered Interview Tool

Fiona Gabbert

University of Abertay

Lorraine Hope

University of Portsmouth

Ronald P. Fisher

Florida International University

Author Notes

Fiona Gabbert, Division of Psychology, School of Social and Health Sciences, University of Abertay, Dundee, Scotland; Lorraine Hope, Department of Psychology, University of Portsmouth, King Henry Building, King Henry I Street, Portsmouth, England; Ronald P. Fisher, Department of Psychology, Florida International University, North Miami, Florida, U.S.. Preparation of this manuscript was supported by grants from the British Academy. Correspondence regarding this article should be addressed to: Fiona Gabbert, Division of Psychology, School of Social and Health Sciences, University of Abertay, Dundee, Scotland, DD1 1HG; f.gabbert@abertay.ac.uk.

Abstract

Given the crucial role of eyewitness evidence, statements should be obtained *as soon as possible* after an incident. This is not always achieved due to demands on police resources. Two studies trace the development of a new tool, the Self-Administered Interview (SAI), designed to elicit a comprehensive initial statement. In Study 1, SAI participants reported more correct details than participants who provided a free-recall account, and performed at the same level as participants given a Cognitive Interview. In Study 2, participants viewed a simulated crime and half recorded their statement using the SAI. After a delay of one week, all participants completed a free-recall test. SAI participants recalled more correct details in the delayed recall task than control participants.

Protecting Eyewitness Evidence: Examining the Efficacy of a Self-Administered Interview Tool.

Information obtained from eyewitnesses plays a crucial role in many forensic investigations. Indeed, a majority of police officers agree that witness statements often provide major leads for an investigation (Coupe & Griffiths, 1996; Kebbell & Milne, 1998). However, memory is fallible, and eyewitnesses are often unable to recall sufficient details regarding important forensic details such as person descriptors (Kebbell & Milne, 1998). Furthermore, information in memory can become distorted. Erroneous eyewitness testimony is recognised as the leading cause for the conviction of innocent suspects (Huff, Rattner & Sagarin, 1996). Obtaining good quality, reliable eyewitness evidence is thus vital for both investigations and preventing miscarriages of justice. The quality of eyewitness accounts, however, may be time-critical, and therefore a significant problem for investigators is the delay incurred between individuals witnessing a crime event and providing their statement. Ideally witnesses should be interviewed *as soon as possible* after a report of an incident. However, all too often this is not possible – largely due to demands on police resources and time. Consider the following example: A serious crime (such as an armed robbery or terror-related incident) has occurred for which there are numerous eyewitnesses, each of whom holds potentially vital information about the event and descriptions of the perpetrators. Limited police resources often restrict opportunities to interview the witnesses for several days or even weeks after the incident (particularly if the witnesses are not directly implicated in the event). During this time, the witness's memory is not only prone to decay, but it is also vulnerable to the influence of post-event

information from numerous sources. Both delay and post-event information have been shown to compromise recall completeness and accuracy (see Anderson, 1983; Ayers & Reder, 1998; Gabbert, Memon, & Allan, 2003; Lindsay, 1990; Loftus, Miller & Burns, 1978; McCloskey & Zaragoza, 1985; Tuckey & Brewer, 2003). Interviewing witnesses as soon as possible after an incident has occurred would be a simple and effective way to minimize the problems associated with delay, and thus obtain more reliable statements.

Delay systematically decreases the amount of information that can be recalled (Ebbinghaus, 1885; Kassin, Tubb, Hosch & Memon, 2001; Rubin & Wenzel, 1996; see also Tuckey & Brewer, 2003). Essentially, items of information in memory become less accessible with increased time (see Anderson, 1983; Ayers & Reder, 1998). This loss of information occurs rapidly at first followed by a levelling off (Ebbinghaus, 1885). Thus, important details may be forgotten quickly. These robust research findings have clear forensic relevance for witnesses who are asked to recall their memories of an event, or to recognise the face of a perpetrator from a lineup (see Read & Connolly, 2006, for a recent review). For example, it is known that the completeness and accuracy of eyewitness evidence *decreases* as the delay between witnessing an incident and recall *increases* (see Penrod, Loftus & Winkler, 1982; Wixted & Ebbesen, 1991, 1997). Turtle and Yuille (1994) found that subjects recalled approximately 43% fewer details about a simulated crime event after a 3-week delay as opposed to being interviewed immediately after the event. Similarly, a meta-analysis of 128 studies of face recognition suggests there is a linear decline in the correct identification of previously-seen faces after a delay (Shapiro & Penrod, 1986). Sporer (1992) found a decrease in correct identifications and an increase in false alarms over various intervals up to three weeks.

Delaying recall also selectively reduces access to detailed information (e.g. Begg & Wickelgren, 1974; Reyna & Kiernan, 1994). Research suggests that coarse or basic level information decays less rapidly than more fine-grained or detailed information (Conway, Cohen, & Standhope, 1991; Goldsmith, Koriat, & Pansky, 2005; Kintsch, Welsch, Schmalhofer & Zimny, 1990; Koriat, Levy-Sadot, Edry & de Marcas, 2003). This pattern of decay of fine-grained information has also been found in reports of simulated crime events. For instance, Fisher (1996) found that eyewitness reports provided after 40 days were less detailed than those provided immediately after the event.

The amount of forgetting can be significantly reduced with an early recall opportunity (Brock, Fisher & Cutler, 1999; McCauley & Fisher, 1995). Thus, interviewing witnesses as soon as possible after an incident can help 'inoculate' against forgetting. Retrieving an item from memory also increases the likelihood that it is recalled again (Bjork, 1988; Shaw, Bjork & Handal, 1995; see also McDaniel, Kowitz & Dunay, 1989; Raaijmakers & Shiffrin, 1980; Wilkinson & Koestler, 1984). Further support for the benefits of retrieval practice on memory is found in the literature on learning, specifically, on the retention of taught material (see Butler & Roediger, 2007; McDaniel & Masson, 1985; Wheeler & Roediger, 1992). For example, Butler and Roediger (2007) recently demonstrated that subjects exhibited improved retention of lecture material following a delay of one month, if they had been given a recall test immediately following the lecture, in comparison to control subjects who had not had an initial recall opportunity. Similarly, within a forensic context, Ebbesen and Rienick (1998) found that once witnesses had made an immediate recall attempt, their subsequent memory recall performance was preserved, and memory loss was unlikely (see also

Yuille & Cutshall, 1986). Associative network models of memory provide an explanation as to why the act of recalling information as soon as possible may 'freeze' the more usual progress of forgetting. Essentially, the act of retrieval can increase the activation level of items of information in memory as well as the associations between them, thus strengthening their representation in memory and enhancing the degree to which they are bound with one another to form an integrated episodic trace (Damasio, 1989; Anderson, 1983; Ayers & Reder, 1998).

The *quality* of the initial recall, in terms of the amount and accuracy of information retrieved, is also important for subsequent retrieval attempts. For example, it is not simply the act of engaging in retrieval at an early stage that preserves episodic memory, but the act of engaging in good quality initial recall. Thus, subsequent retrieval attempts are likely to be facilitated by a good, and impeded by a bad, quality initial recall respectively (e.g., Hashtroudi, Johnson, Vnek & Ferguson, 1994; Marsh, Tversky & Hutson, 2005; Suengas & Johnson, 1988; Tversky & Marsh, 2000; though see McCauley & Fisher, 1995 and Brock et al., 1999). A poor quality initial recall can be particularly detrimental as recall errors made in an initial retrieval attempt may be repeated in future retrievals (see Pickel, 2004). Furthermore, the act of recalling an incomplete subset of information from an episodic memory can sometimes impair one's ability to subsequently recall the remaining (unrecalled) items of information (e.g., Koutstaal, Schacter, Johnson & Galluccio, 1999; Roediger & Neely, 1982; Shaw, Bjork & Handal, 1995).

The implications of these findings for current police practice are disconcerting. At present witnesses are likely to engage in a very brief initial interview (to acquire basic

investigatory information) at the scene of an incident or shortly afterwards prior to giving a full statement at some later date. In light of research findings it is possible that this brief initial interview may have a detrimental effect on a witness's ability to fully recall the incident at a later occasion. Therefore, it is critical that the initial evidence obtained from witnesses be as detailed as possible.

A widely used method to obtain a detailed memory report from a witness is to conduct a Cognitive Interview (CI), an interviewing protocol based on various principles of memory retrieval and general cognition, social dynamics, and communication (Fisher & Geiselman, 1992). The CI has been found to elicit more information from eyewitnesses in comparison to a standard police interview, without decreasing accuracy (e.g., Fisher et al., 1987; Fisher, Geiselman & Amador, 1989; Mello & Fisher, 1996; Wright & Holliday, 2007; for reviews of the CI literature see Bekerian & Dennett, 1993; Fisher, 1995; Fisher & Schreiber, 2007; Geiselman & Fisher, 1997; Köhnken, Milne, Memon & Bull, 1999; Memon & Bull, 1991). However, the technique is not without limitations. One important drawback concerns the demands placed upon police resources, primarily due to the length of time taken to conduct a full interview. Surveys of British police officers reveal that there is rarely time to interview witnesses with a full CI (see Kebbell, Milne & Wagstaff, 1999; Kebbell & Wagstaff, 1996; Kebbell & Wagstaff, 1999). Consequently, more recent research has focused on developing time-critical shorter versions of the CI for use when obtaining eyewitness evidence is a priority, but where available time to conduct interviews is limited (e.g., Davis, McMahon & Greenwood, 2005; Milne & Bull, 2002). However, even a shortened CI requires police resources in terms of time and manpower. Thus, witnesses are likely to experience a delay before being interviewed. A delay

between witnessing an incident and providing a statement is likely to be compounded when there are multiple witnesses to a crime, as it is highly unlikely that sufficient interviewers will be available at the scene of an incident. Furthermore, officers who are deployed to the crime event may be faced with responsibilities that take precedence over interviewing witnesses (e.g. preserving life and property, securing and preserving the crime scene etc.). In reality, therefore, the ideal of interviewing witnesses as soon as possible after the reporting of an incident may not be achievable.

The current research is a direct response to the problem of obtaining high quality witness evidence quickly, efficiently, and with minimal police resources available. Across two studies, we present the development and early-stage testing of a new recall tool, the Self-Administered Interview (SAI), which has been designed to elicit a comprehensive initial statement from witnesses. The SAI enables witnesses to record their memories of an incident by themselves whilst following a specific protocol of instructions and questions. A recall tool designed specifically for forensic investigations offers clear benefits. First, given well-established findings within empirical cognitive and eyewitness literature, the SAI should support and enhance recall and, as a consequence, increase the reliability of eyewitness evidence. Secondly, use of the SAI will minimise the burden on police resources, particularly when an incident involves multiple witnesses. As such, it could be used by police forces as a simple and efficient recall tool to aid in the timely collection of high-quality witness evidence, prior to conducting a more formal CI.

The current article outlines two studies investigating the efficacy of the SAI. Study 1 explores whether the SAI facilitates the recall and reporting of more information than simply asking participants for a detailed Free Recall report. A further aim of Study 1

is to ensure that the instructions and questions in the SAI are clear, and that participants understand the importance of following them. Study 2 examines whether mock witnesses who complete the SAI show a recall advantage following a delay, in comparison to witnesses who do not complete the recall tool.

Study 1

Method

Design

Study 1 used a between-subjects design. After witnessing a videotaped staged crime, participants were allocated randomly to one of three conditions. In the Self-Administered Interview (SAI) condition, participants used the SAI tool to report their memories of the witnessed event. In the Free Recall (FR) condition, participants were instructed to write as much as they could remember about the event, and in the Cognitive Interview (CI) condition, participants were given a CI about the event by an interviewer who was fully trained in the technique. Training in the CI involved in 6 hours of lectures and 6 hours of exercises and feedback, in addition to ten practice eyewitness interviews. All components of the CI were used apart from the Change Order and Change Perspective instructions.

Participants

Fifty-five participants were recruited from a university campus (33 male; 22 female; approximate age-range 18 - 40 years) and participated in exchange for a small honorarium.

Materials

Stimulus event. The stimulus event depicted an attempted car break-in (lasting 2 minutes, 40 seconds). The non-violent event takes place in a full car park and involves three main target characters behaving in a suspicious manner as they examine several different cars with an apparent view to breaking into one of them. There were a few additional incidental actors who appeared in the film including the car owners who interrupted the perpetrators towards the end of the film. This event has been used previously in research on the CI (Wright & Holliday, 2007). The film was shown individually to participants on a high-quality 20-inch television screen.

Self-Administered Interview. The SAI recall tool, presented in the form of a booklet, comprised five sections containing information and instructions designed to facilitate both recall and reporting of memories for a witnessed event. The SAI was designed to be a generic recall tool, usable for reporting different types of crime. The SAI instructions were piloted through several iterations for clarity, ease of understanding and simplicity.

Section 1 provided witnesses with background information regarding the SAI with emphasis placed on the importance of following the instructions, and working through the five SAI sections in sequential order. Section 2 contained information and

instructions pertaining to the Context Reinstatement and Report Everything components of the CI. Instructions also requested witnesses to provide the most complete and accurate account possible but to avoid guessing. Section 3 focused on gaining detailed person descriptor information by asking witnesses to provide as much detail as possible about the perpetrators' appearance (e.g., hair, complexion, build, distinguishing features, etc.). Section 4 asked witnesses to generate a sketch of the scene to preserve important spatial information. Instructions here assured witnesses that this was not a test of drawing ability, but rather a request for a graphical representation of the general layout of the scene including positions of themselves in relation to other persons present (perpetrators and other witnesses). Section 5 contained questions relating to the event that witnesses might not previously have thought to mention, for example, details of the viewing conditions at the scene of the event (e.g., time of day, lighting, whether their view was clear or obstructed, weather conditions, etc.). Witnesses were also asked to describe any persons who may have been present and who may have seen what happened even if they were not directly involved (e.g., other witnesses).

Free Recall Form. Participants in the FR condition were supplied with response booklets and were instructed to report event-related details (sequence of actions, events, etc.) and person-descriptor details (including descriptions of other witnesses/passers-by). These participants were instructed to provide the most complete and accurate account possible, but to avoid guessing.

Procedure

All participants took part in the study individually. Participants were informed that they would view a short film and would then be asked to report what they had seen. After viewing the film, participants were allocated randomly to the SAI, FR or CI condition. Participants in the SAI and FR conditions were supplied with the booklets appropriate to their condition and instructed to follow the written instructions carefully. Participants in the CI condition were given a CI (excluding the Change Order and Change Perspective components) by an interviewer fully trained in the CI technique. The interview followed the enhanced CI protocol recommended by Fisher and Geiselman (1992). For example, initially the interviewer spent some time chatting with the participant to build rapport. Participants were then asked to mentally recreate the external environment, as well as their affective, cognitive and emotional states that existed at the time of witnessing the event. Following this, participants were asked to report everything they could remember about the event. They were encouraged to deliver their report as a free narrative and were at no point interrupted by the interviewer. Afterwards, the interviewer asked a set of open-ended questions matching those contained in the SAI relating to perpetrator appearance. Finally, participants were asked if there was anything else they remembered about the event. All interviews were audio-recorded.

To reduce any effects of physical context on recall performance, participants in each condition provided their recall account in a different location to that in which they had previously watched the stimulus event. No time limits were imposed on participants in any condition.

Finally, we gave each participant in the SAI condition a post-study 'usability interview' to examine his or her experience of completing the tool. This interview included questions such as "*Where any of the questions or instructions unclear? If so please indicate which and try to explain why*", "*Did you understand why you were sometimes asked to follow instructions when recalling your memories?*", "*Did you follow these instructions? If not please be honest when explaining why*", etc.. Additional questions asked participants whether they found the SAI supportive, enquired about the amount of effort it required (e.g., mentally, physically, temporally), and asked for suggestions for future revisions of the recall tool.

Recall Coding

Recall was coded using Wright and Holliday's (2007) scoring template, which classifies each piece of information in the stimulus video as an Action (A), Person (P), Object (O), or Setting (S) detail. For example, a video sequence about 'a girl pushing a green bike across the car park' was coded as: 'girl (1-P) pushed (1-A) green (1-O) bike (1-O) across a car park (1-S).' (Example cited from Wright & Holliday, 2007, p26).

The scoring template contained 699 pieces of information: 121 Action details; 387 Person details; 81 Object details, and 110 details about the Setting. Details reported in the SAI, FR and CI conditions were coded against this template for accuracy. An item was deemed correct if it was present in the video and described correctly, and deemed incorrect if it was present in the video but described incorrectly or if it was not present in the video at all. Subjective responses (such as, "he was ugly") were not coded. Finally,

each item of information provided by the witnesses was counted only once when tallying total accuracy scores.

To assess inter-coder reliability, 10 randomly selected interviews were coded by two independent scorers. Pearson correlations were computed for the following measures: total correct items (r (10), 0.99, $p < .001$); and total incorrect items (r (10), 0.93, $p < .001$). Based upon this analysis inter-coder reliability was deemed acceptable for each variable.

The sketch instruction was an important component of the SAI as it has the potential to generate important information in a real-life setting. However, details provided in the sketches were not coded in this study. The purpose of incorporating this instruction was simply to see if participants understood the instructions and purpose of having such a task. Furthermore, we were interested to see if participants attempted a sketch, and if so, to examine the quality of the information elicited.

Results and Discussion

There was a significant effect of experimental condition on the number of accurate details reported (SAI $\underline{M} = 70.70$; CI $\underline{M} = 84.53$; FR $\underline{M} = 41.50$; $F(2,52) = 24.72$, $p < .001$, $\eta_p^2 = .49$). Post-hoc Tukey tests revealed that participants in both the SAI condition and the CI condition reported significantly more accurate details than participants in the FR condition. The number of accurate details provided did not differ significantly between the SAI and CI conditions.

Accuracy rates were calculated by dividing the total number of accurate items reported by the total number of items reported overall (accurate items + inaccurate items).

There was a significant difference in accuracy rates between the groups (SAI M = .89; CI M = .93; FR M = .91; F (2, 52) = 5.34; p = .008, η_p^2 = .17). Post-hoc tests revealed no difference in accuracy rates between the SAI and FR conditions, or between the CI and FR conditions, however, the mean accuracy rate for participants in the CI condition was significantly higher than for those in the SAI condition.

In order to determine what kinds of information participants reported, we examined person, action, object and setting details separately. For each coding category the number of accurate items reported was significantly higher in the SAI and CI conditions than in the FR condition (people: F (2,52) = 20.88, $p < .001$, η_p^2 = .45; actions: F (2,52) = 17.52, $p < .001$, η_p^2 = .40; setting: F (2,52) = 17.27, $p < .001$, η_p^2 = .40; objects: F (2,52) = 4.51, $p < .02$, η_p^2 = .15). Post-hoc tests revealed that for each category, accurate recall in the SAI condition did not differ from the CI condition.

Analyses of accuracy rates for each coding category revealed no difference between conditions for setting details or for object details. However, there was a significant difference in accuracy rates between groups for person details (F (2, 52) = 3.54; p = .036, η_p^2 = .12), and for action details (F (2, 52) = 3.21; p = .049, η_p^2 = .11). Post-hoc tests revealed that for the person and action categories, mean accuracy rates were highest in the CI condition, and did not differ statistically between the SAI and FR conditions. Please refer to Table 1 for means and standard deviations.

Table 1 about here

SAI Usability Interviews

Overall, the interviews served an important role in helping us critically evaluate the SAI. The feedback revealed that all participants (i.e., 100%) found the information provided throughout the SAI to be clear. Furthermore, all participants claimed to have followed the instructions provided, and had understood the benefits of doing so. In general the feedback was largely positive, as the following representative comments suggest; "*Helped improve my memory as I progressed through the questions*"; "*The sub-division of sections was useful*"; "*I found graphical input useful*"; "*Context reinstatement helped me get my head/facts clear*"; "*The sketching task was good but perhaps it could have been put at the start of the booklet*".

A small number of comments highlighted that participants felt that they had to provide the same information in more than one section of the SAI *(e.g., "Everything written had to be covered again"*, and that the nature of the of the task was effortful (e.g. *"It would have been easier to have had the option to type or dictate – writing is a little hard going"*.

In sum, the findings of Study 1 were positive and indicate that the SAI produced significantly more accurate information than a Free Recall instruction. The data are therefore very encouraging and clearly suggest that the SAI tool is a simple and efficient method of collecting high-quality recall. Furthermore, the amount of accurate information obtained using the SAI did not differ significantly to that obtained in an interviewer-administered partial CI. These findings are important as an obvious concern for the SAI is the lack of 'social' support which plays a central role in the enhanced CI (Fisher et al., 1987). The lower accuracy rates obtained in the SAI condition warrant further

investigation. In hindsight, we believe that the instructions for accuracy, and the warnings to avoid guessing, could have been stated more clearly in the SAI booklet. Our future research will monitor accuracy rates, exploring ways in which to increase them if necessary.

The primary aim of Study 2 was to investigate whether the SAI recall tool could help protect against forgetting when there is a delay between encoding and retrieval. As outlined in the Introduction, following a real life incident there is often an unavoidable delay between witnessing a crime and reporting details in a full police interview. We examined the amount and accuracy of information reported following a one-week delay for participants who had, and had not, completed an SAI immediately after witnessing a simulated crime event. We hypothesized that participants who complete an SAI form after viewing an event would remember more correct details following a delay than participants who do not have this early recall opportunity.

Study 2

Method

Design

Study 2 used a between-subjects design with two conditions. After viewing a simulated crime event (the same as used in Study 1) participants in the Control condition provided contact details and arranged a time to return for a follow-up session the following week. Participants in the Self-Administered Interview (SAI) condition completed an SAI

booklet prior to arranging a time for the follow-up session. None of the participants were informed of the nature of the second session. Following a delay of one week, all participants took part in the second phase of the study where they completed a free-recall task.

Participants

Forty-two participants were recruited from local civic offices (10 male; 32 female; approximate age-range 30-60 years), and participated in exchange for money that was donated to charity.

Materials

The stimulus event used in Study 2 was the same as that in Study 1. Minor alterations were made to the SAI for the purpose of clarifying the instructions regarding the importance of accuracy. Specifically, changes were made to the spatial layout of the instructions so that important instructions appeared on separate lines rather than in a single paragraph.

Procedure

Participants took part individually or in small groups, and viewed the stimulus event. Following this, participants were allocated randomly to one of two experimental conditions. In the SAI condition, participants completed the SAI form with no time limits imposed (participants took approximately 30 minutes to complete the SAI). Prior to leaving the room, the participants made arrangements to attend Session 2 following a

delay of one-week. Participants in the Control condition were simply asked to make arrangements to return one week later for Session 2. No information was given to any of the participants regarding expectations for the follow-up session.

Following the one-week delay, all participants returned for Session 2. Once again, participants took part either individually or in small (non-conferring) groups. Participants in both conditions were given the same free recall instructions asking them to report as much accurate information as possible about the event they had viewed a week prior, in Session 1. For this task, all participants were supplied with the same Free Recall booklets containing instructions to provide details about the event (actions, events, etc.) and descriptions of people involved (including other witnesses/passers-by). Participants were told that they should provide the most complete and accurate account possible while avoiding guessing. No time restrictions were imposed for this free recall task (participants took approximately 20 minutes to complete their report). As in Study 1, participants in the SAI condition were given a 'usability interview' after they completed writing their answers in the Free Recall booklet.

Coding

The Free Recall booklets were coded using the same scoring template as used in Study 1. Inter-coder correlations were calculated for the number of accurate and inaccurate items reported. There was a significant level of agreement between two independent coders based on a random sample of ten transcripts (r (10), 0.98, $p<0.01$, and r (10), 0.95, $p<0.01$, for accurate and inaccurate items respectively).

Results and Discussion

There was a significant effect of experimental condition on the total number of accurate details reported in the Free Recall account produced after a week's delay. Participants who had completed the SAI a week prior recalled significantly more correct details in the delayed Free Recall test than participants who did not document their recall soon after witnessing the event (SAI M = 62.00; Control M = 45.90; F (1, 40) = 5.41, p = .025, η_p^2 = .12). Furthermore, participants in the SAI condition exhibited a significantly higher mean accuracy rate than Control participants (SAI M = .93; Control M = .88; F (1, 40) = 9.29, p = .004, η_p^2 = .19).

Participants in the SAI condition reported significantly more correct details than control participants regarding people they observed in the original event (SAI M = 36.57; Control M = 22.90; F (1,40) = 12.87, p < .001, η_p^2 = .24). For the other three categories of information (objects, actions, setting), there were no significant differences between conditions in terms of number of accurate details reported. Mean accuracy rates for person details and action details were significantly lower for Control participants (F (1,40) = 9.04, p = 005, η_p^2 = .18, and, F (1,40) = 6.14, p = .018, η_p^2 = .13, for person and action variables respectively). Accuracy rates for object and setting details did not differ between conditions. See Table 2 for means and standard deviations.

Table 2 about here

In sum, the data from Study 2 confirm the hypothesis that recording one's memories using an SAI form soon after witnessing an event has clear and important

benefits for subsequent recall attempts. Specifically, participants who completed an SAI remembered more information about the event, including significantly more forensically relevant person details, than Control participants. Furthermore, the increase in information recalled did not come at a cost to accuracy. On the contrary, accuracy rates were significantly higher for participants who had completed the SAI.

General Discussion

The purpose of the current research was twofold. Our first objective was to systematically test a Self-Administered Interview tool that we developed specifically for implementation in a forensic setting to elicit a comprehensive initial statement from witnesses as soon as possible following an incident. Our second objective was to test the benefits of an SAI recall tool in a mock witness situation where there is a delay between witnessing an event and providing a formal recall statement.

Study 1 tested our SAI recall tool that comprised instructions and questions specifically designed to facilitate remembering. Components from the CI were incorporated to help witnesses generate their own retrieval cues and thus access and report as much event-related information as possible. Participants were also required to generate a sketch of the scene so that spatial information could be reported in code-compatible format (Fisher & Geiselman, 1992). Retrieval attempts were guided towards recalling information about the sequence of actions and events about the witnessed event, and details of any persons involved. In Study 1 the SAI elicited significantly more correct information than did a Free Recall request. This suggests that the recall instructions and questions included in the SAI were indeed facilitating recall of the event.

Study 2 investigated whether the recall advantage obtained using the SAI in Study 1 would be preserved following a delay of one week. We found that completing an SAI soon after witnessing an event has clear benefits for a delayed subsequent recall attempt. Specifically, participants who completed an SAI outperformed control participants in a Free Recall test that was given one week after the event was experienced. These findings are consistent with current theoretical literature on memory and the benefits of repeated retrieval attempts. The associated applied implications for real world use in collecting valuable witness evidence are also clear.

We do, however, acknowledge limitations of the SAI. One concern is that the current format – which requests witnesses to complete the form by hand – may be a limiting factor for several witnesses, such as those with language or literacy difficulties. Research is under way to develop alternative formats of the SAI in which witnesses will have options to narrate or type their responses to the questions. A second limitation related to applying this research in a forensic setting is that the SAI tool is not suitable for witnesses to all crimes. In particular, victims of violent or sexual crime, traumatised witnesses and other vulnerable population groups should always be offered social support when recounting their memories (e.g., Milne & Bull, 1999). Furthermore, even witnesses for whom the SAI is suitable might not appreciate the 'impersonal' nature of the recall tool. Future research should monitor this, as it is likely that witnesses will use the SAI effectively only if they feel it is worthwhile and beneficial. For these reasons, the SAI is not proposed as a replacement to a full Cognitive Interview of key witnesses by a trained interviewer.

Despite these limitations, our initial results are promising and show that the SAI is an effective recall tool with potential as an alternative means of collecting witness evidence shortly after an incident. In addition to providing the police with a means to obtain high quality evidence from numerous witnesses with minimum delay, the SAI has a number of other advantages. First, it removes the problem associated with the current police practice of giving witnesses a brief initial interview, which can have a detrimental effect on subsequent recall (Hashtroudi et al., 1994; Marsh et al., 2005; Suengas & Johnson, 1988; Tversky & Marsh, 2000). Instead, the SAI encourages witnesses to provide a highly detailed report that serves to benefit subsequent recall. Furthermore, having a standardised recall protocol in the form of the SAI limits the chances of other poor interview practices that might occur such as the use of leading questions, closed questions, and putting pressure on witnesses.

Other advantages of the SAI are that it allows for all witnesses to provide evidence, regardless of the perceived 'status' of a witness (i.e. a 'key' witness). This overcomes a resource problem sometimes faced by police when, due to lack of time or the developing nature of an incident, they may have to be selective with respect to the witnesses they choose to question in greater detail. In other words, a witness who is perceived to have had a better view or is more confident may be selected for closer questioning whereas other witnesses may not always have the opportunity to give an early account of what they have seen. The SAI allows the collection of information from these more peripheral witnesses who may, after all, hold important pieces of information by virtue of a different perspective of the incident or an earlier or later location in the timeline of the incident. Furthermore, the fact that witnesses using the SAI can all give

evidence simultaneously means that there is less drain on valuable police resources (e.g., time, manpower) so that they can focus on other important tasks.

Research underway seeks to build upon our initial findings by exploring the precise mechanisms by which an early recall attempt supports memory retrieval in subsequent recall attempts. For example, providing an immediate recall opportunity in the form of the SAI may help maintain episodic memory (Anderson, 1983). Thus, individuals who have completed an SAI might exhibit reminiscence, and subsequently recall additional items of accurate information about a witnessed event that they had not reported in the initial SAI. Alternatively, the SAI may preserve only those items initially reported. Thus, even with retrieval support during subsequent recall attempts, participants may not report any additional details. This research focus will also allow us to investigate the consistency between information reported in an SAI and in a subsequent recall attempt.

A further objective is to explore whether the SAI will help strengthen and support the original episodic memory trace, and thus inoculate against susceptibility to misleading post-event information. This objective is particularly pertinent in light of a recent finding that misinformation encountered before a detailed statement is obtained may be errantly and persistently recalled in subsequent interview attempts (Lane, Mather, Villa & Morita, 2001). As the SAI allows a comprehensive immediate recall attempt, it clearly has the potential to become a widely used recall tool for forensic investigations.

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Table 1. Mean accuracy, inaccuracy and accuracy rates of items recalled in each condition, standard deviations in parentheses.

Details		SAI		CI		FR	
		M	(SD)	M	(SD)	M	(SD)
Person	Accurate	41.40	(13.15)	46.93	(11.68)	23.60	(9.10)
	Inaccurate	6.90	(4.22)	4.47	(2.59)	2.85	(2.50)
	Accuracy rate	0.86	(.07)	0.91	(.04)	0.90	(.06)
Action	Accurate	15.80	(4.79)	19.93	(5.95)	10.00	(4.39)
	Inaccurate	0.90	(.97)	0.60	(.83)	0.90	(.85)
	Accuracy rate	0.95	(.06)	0.97	(.04)	.92	(.09)
Object	Accurate	8.10	(3.95)	10.27	(6.18)	5.75	(3.16)
	Inaccurate	0.95	(.94)	0.67	(.82)	0.40	(.50)
	Accuracy rate	0.90	(.09)	0.94	(.09)	0.89	(.17)
Setting	Accurate	5.40	(3.13)	7.40	(3.22)	2.15	(1.49)
	Inaccurate	0.10	(.31)	0.13	(.52)	0.10	(.31)
	Accuracy rate	0.97	(.08)	0.99	(.05)	0.96	(.12)
Total	Accurate	70.70	(20.46)	84.53	(21.66)	41.50	(14.0)
	Inaccurate	8.85	(4.85)	5.87	(3.36)	4.20	(2.31)
	Accuracy rate	0.89	(.05)	0.93	(.03)	0.91	(.03)

Table 2. Mean accuracy, inaccuracy and accuracy rates of items recalled in the delayed free-recall task by participants in each condition, standard deviations in parentheses.

Details		SAI		Control	
		M	(SD)	M	(SD)
Person	Accurate	36.57	(16.57)	22.90	(9.75)
	Inaccurate	2.95	(2.77)	4.48	(5.01)
	Accuracy rate	0.93	(.06)	0.86	(.08)
Action	Accurate	12.95	(4.52)	12.81	(9.55)
	Inaccurate	0.52	(.60)	1.43	(1.50)
	Accuracy rate	0.96	(.04)	0.89	(.12)
Object	Accurate	8.24	(3.85)	6.86	(6.00)
	Inaccurate	0.81	(1.12)	0.90	(1.37)
	Accuracy rate	0.90	(.15)	0.89	(.14)
Setting	Accurate	4.62	(3.14)	3.33	(3.45)
	Inaccurate	0.05	(.22)	0.19	(.40)
	Accuracy rate	1.00	(.02)	0.94	(.14)
Total	Accurate	62.38	(22.04)	45.90	(24.02)
	Inaccurate	4.33	(3.09)	7.00	(6.03)
	Accuracy rate	0.93	(.05)	0.88	(.06)