Goldsmiths Research Online

Citation

Persistent URL

Versions

Goldsmiths
UNIVERSITY OF LONDON

Title: EXAMINING THE EFFICACY OF A SELF-ADMINISTERED REPORT FORM IN MISSING PERSON INVESTIGATIONS

Short title: *MISSING PERSON INVESTIGATIONS*

Fiona Gabbert*[1], Donata Tamonyte[1], Joe Apps[2], Alessandra Caso[1], Penny Woolnough[3], Lorraine Hope[4], Megan Handscomb[1], and Georgina Waterworth[1]

[1] Goldsmiths University of London
[2] Missing Persons Unit, National Crime Agency
[3] Abertay University
[4] University of Portsmouth

* Corresponding author information: Fiona Gabbert, Department of Psychology, Forensic Psychology Unit, Goldsmiths University of London, New Cross, U.K., SE14 6NW (e-mail: f.gabbert@gold.ac.uk).

Abstract:

Purpose: The success of missing person investigations often centres on the quality of information obtained in the early stages. Reliable information can not only inform the search but might also become vital evidence if the case broadens into a criminal investigation relating to a sexual offence, abduction, or even murder. In addition to eliciting high quality information, police officers must consider that those close to the missing person are likely going through a very difficult and stressful time. Across two studies, we developed and tested a self-administered form (SAI-MISSING) designed to obtain reliable information that would meaningfully inform a missing person investigation, as well as providing a means for family and friends to be actively involved.

Methods: In Experiment 1, 65 participants were tested individually and asked to provide a description of a person they knew well but had not seen for 24 hours. In the second study, 64 participants were tested in pairs, but immediately separated into different rooms and instructed to imagine that the person they came with has gone missing. In both studies participants completed either the SAI-MISSING tool, or a self-administered control form.

Results: In Experiment 1 we found that the SAI-MISSING tool elicited significantly more information regarding physical descriptions and descriptions of clothing and personal effects, than the comparison control form. In Experiment 2 we replicated this finding, and further showed that the SAI-MISSING tool produced higher accuracy rates than the control form.

Conclusions: Given the positive outcomes, potential applications of the tool are discussed.

Data availability statement:
The data that support the findings of this study are available from the corresponding author upon reasonable request.

Examining the Efficacy of a Self-Administered Report Form in Missing Persons Investigations

In a missing person investigation, anyone whose whereabouts cannot be established should be considered as missing until they have been located, and their well-being or otherwise confirmed (College of Policing, 2018). The most recent UK statistics show that in 2016/2017, police in England and Wales received 387,930 reported incidents of a missing person which resulted in 147,859 investigations being carried out (approximately 405 per day; National Crime Agency, 2019). The report also indicates that the number of people recorded as missing is increasing every year. Shalev-Greene and Pakes (2014) estimated that a single medium risk, medium term missing person investigation in the UK incurred costs of up to £2,500, and that the annual cost of missing person investigations equated to over 19,000 Police Constables working full time. These costs have naturally risen over time, making missing persons investigations a significant expense for the police. Research and government reviews in other countries suggest there is no reason to assume that the situation in the UK is somehow unique, or that the volume of missing persons and associated investigative costs are dissimilar to other countries (James, Anderson & Putt, 2008; An Garda Síochána, 2009). For example, the rate of missing persons in Australia is estimated to be 1.5 per 1000 of the Australian population (James et al., 2008), and in the United States approximately 80,000 people are recorded as 'actively missing' at any given time (National Crime Information Center, 2016). In Canada, there were 31,387 reports of missing children and 42,233 reports of missing children in 2018 (Royal Canadian Mounted Police, 2018).

In the UK, under 18-year olds make up the highest proportion (63%) of all missing people (National Crime Agency, 2019). They are also a very vulnerable and diverse group; therefore, each case is unique and challenging for investigators (ACPO, 2013). For example, missing children are often temporarily lost, but they may also have been abducted by a stranger

or somebody they know (Newiss & Traynor, 2013). The number of children missing from local authority care are also disproportionally high (Biehal & Wade, 2000; Hayden & Goodship, 2013). Statistics indicate that this group is particularly vulnerable to sexual exploitation and trafficking (ECPAT, 2018; Jago & Pearce, 2008). Common reasons for going missing as an adult include drug and alcohol misuse, mental health problems, escaping negative situations, and relationship breakdowns within families (Biehal, Mitchell, & Wade, 2003; Gibb & Woolnough, 2007). Recent changes to lifestyle or personal circumstances, as well as more historical events such as anniversaries, are factors considered in the risk-assessment of missing adults (Gibb & Woolnough, 2007). Consequently, missing children and adults present complex and varied vulnerabilities which place significant pressure on the police to resolve cases as quickly as possible.

Researchers investigating people's experiences during the early days of discovering that someone close to them has gone missing include shock, distress, helplessness, feeling stuck with no support, constantly waiting for news, sleep disturbances, and intrusive thoughts of the worst-case scenario (Holmes, 2008; Wayland, 2007). In long-term missing cases, families and partners describe experiencing a sense of 'ambiguous loss', which has been described as an internal conflict between hope and hopelessness, going through a loss of someone who is not wholly absent, and the experience of grief without closure (Boss, 1999, 2002, 2006). According to the UK charity Missing People, 48% of surveyed family members revealed that their relative being missing resulted in mental health problems (Missing People, 2013). While officers are trained in the process of missing person investigations, they are not always trained to respond to the emotional difficulties and needs of those reporting the individual. This has sometimes led to negative feedback regarding police conduct, with some people reporting a perceived lack of concern from the officers assigned to the case, arising from delayed and impersonal responses, or struggling to cope with an officer's encouragement to move on with their lives (Parr & Stevenson, 2013).

The success of a missing person investigation is often reliant on the quality of information obtained in the early stages (Hedges & Shalev-Greene, 2016). In order to determine the urgency of response required, initial assessments seek to classify whether a person is missing or deliberately absent, and what level of risk the person might be to themselves or others (College of Policing, 2018). Due to the large number of people reported missing on a daily basis, a full investigation by the police is not always possible, especially if a case has been categorized as low risk (Eales, 2016; Bayliss & Quinton, 2013). If a full investigation is required, interviews are conducted with the individual who has reported the missing person, as well as others who may hold important information. The amount and accuracy of information elicited at this stage is crucial as this informs early-stage decision-making which in turn can influence the progress and resolution of the case in positive (or negative) ways. For example, what does the missing person look like, what do they have with them, did they prepare for leaving? Important details that often precede someone going missing may be subtle, out of character signs that may have been initially regarded as unimportant by those close to the missing person. Therefore, it is also useful for officers to sensitively help individuals consider whether there have been any recent changes to the person's normal routine or mood that might provide a clue to their whereabouts or well-being. However, the sheer volume of people reported missing amongst other policing demands means that it can be challenging for the police to conduct interviews, while also managing the worries of those who have reported the missing person. Furthermore, in the immediacy and emotion of reporting someone missing, the family member may not be able to clearly identify all potentially relevant items of information and may need re-interviewing which further adds to resourcing demands (Fyfe, Stevenson, & Woolnough, 2014).

In response to these operational challenges for law enforcement, an adapted version of the Self-Administered Interview (SAI; Gabbert, Hope, & Fisher, 2009) has been developed in

collaboration with practitioners[1] for use in missing person investigations. The 'SAI-MISSING' tool is a standardized protocol of clear instructions and questions that guide the respondent through the process of providing information that will help a missing person investigation. As per the original SAI, it includes evidence-based psychological techniques to enhance recall and reporting of relevant information. It also endorses recommended best practice for interviewing via the use of free-recall questions to elicit narrative responses that are proven to be more accurate than responses to cued-recall questions (Lamb, Orbach, Hershkowitz, Esplin, & Horowitz, 2007). The SAI-MISSING tool can be used to collect key information prior to initial contact. Alternatively, officers can conduct the initial interview and risk assessment, and then ask the reporting person to complete the SAI-MISSING tool in his or her own time, returning it later to further inform the investigation.

The SAI-MISSING tool comprises three sections, each reflecting key areas of investigation outlined in best practice guidelines (College of Policing, 2018). These sections focus on eliciting (1) a detailed and accurate physical description of the missing person, including (if relevant) a description of what they were wearing and any personal effects they had with them; (2) circumstances surrounding the disappearance of the missing person, including who they were with, and their intentions (if known); and (3) information about the missing person's normal routine, moods, and behaviours, alongside instructions to consider and report any recent changes to these. The SAI-MISSING tool also provides respondents with a list of tasks that could enable them to further help (find a clear and recent photo, list relevant contacts, passwords, significant items missing, etc.). Where relevant, mental reinstatement of context instructions (Fisher & Geiselman, 1992) are used to help individuals remember and mentally picture the missing person prior to providing information. As a whole the tool has

---

[1] The content of the SAI-MISSING tool was refined in a focus group organized by the third author, involving nine practitioners from nine police forces, each with expertise in missing persons investigations.

been designed to enable the police to respond to a report of a missing person immediately and efficiently, to elicit detailed and useful information for the investigation, and to provide a means for the individual/s reporting the missing person to be actively involved and engaged in the investigation.

The primary aim of the current research was to examine the efficacy of the SAI-MISSING tool for eliciting relevant information in a hypothetical missing person investigation. Specifically, we sought to address whether retrieval support in the form of a mental reinstatement of context elicited more person descriptors in comparison to a simple free-recall instruction. Based on research showing that both the original and bespoke versions of the SAI recall tool elicit more information than a free-recall comparison (Gabbert et al., 2009; Hope, Gabbert, Fisher, & Jamieson, 2014; MacLean, Gabbert, & Hope, 2019), it was predicted that participants who complete a SAI-MISSING form will report more person descriptors than those who complete a self-administered control form (that contains the same questions but an absence of cognitive retrieval instructions). In addition, we explored which types of information were most likely to be reported or withheld when reporting a missing person, and why. This was in response to indications that people do not always share all of the information they are able to at the early stages of an investigation, which is an additional challenge faced by police officers (J. Apps, National Crime Agency, personal communication, January 18, 2017). In order to position the study within the context of a missing person investigation, participants were asked to imagine that someone they know well (e.g. friend, partner, colleague), and who they have seen in the last 24 hours, has gone missing, and to provide information accordingly.

Experiment 1

Method

Participants and Design

A between-subjects design with two conditions (SAI-MISSING vs. Control) was used. A G*Power analysis (Faul, Erdfelder, Lang, & Buchner, 2007) indicated that $n = 52$ was required to reach statistical significance for a large effect size with power $(1 - \beta)$ set at 0.80 and $\alpha = 0.05$. A total of 65 participants were recruited from student and community-based samples via poster, online, and e-mail advertising, and took part in return for either course credit or £5.00. Participants were randomly allocated to an experimental condition whereupon they either completed the SAI-MISSING form (n = 32), or a control condition whereupon they completed a Control Form (n = 33). All participants were fluent in English, age-range = 18 – 69 years ($M = 27.12$, $SD = 10.09$), 45 participants were female.

Participants in the SAI-MISSING condition chose to report information about partners (n = 12), family members (n = 8), friends (n = 10), and colleagues (n = 2). Those in the Control condition reported information about partners (n = 12), family members (n = 3), friends (n = 17), and colleagues (n = 1). 72% of participants in the SAI-MISSING condition, and 76% in the Control condition reported that they knew the person they were describing very well, while the remaining participants in each condition said quite well.

Materials

Missing Persons Self-Administered Interview (SAI-MISSING). The SAI-MISSING tool, presented in the form of a booklet, comprised four sections containing information and instructions designed to facilitate both recall and reporting of information that would be of value in a missing persons investigation. It combines features drawn from the original Self-Administered Interview (SAI, Gabbert et al., 2009) alongside current best practice in missing person investigations (College of Policing, 2018). Participant information at the outset requested participants to complete the sections in sequential order, follow the instructions throughout, and provide accurate and detailed information in response to the questions.

Section 1 requested general information about the missing person such as their name (including nicknames/aliases), demographic information, contact information, mode of transport used, and similar. Section 2 requested a physical description of the missing person. Here, mental reinstatement of context instructions guided participants to think of a specific memory that they had of the (hypothetical) missing person, and then try to remember where they were at that time, what they were doing, who else was there, what they were talking about, whether anything particularly memorable happened on that occasion, and so on. Participants were then asked to hold that memory in mind while providing a detailed physical description of the missing person. A series of cues were provided to further facilitate retrieval (e.g., height, build, facial appearance, hair style and colour, and any identifying marks or distinguishing characteristics such as scars and tattoos). The request for a physical description was followed with a request to provide a detailed description of what the (hypothetical) missing person was wearing the last time they were seen (e.g., clothing, jewellery and accessories, and other belongings such as bag, phone, etc.). Participants were instructed to be as complete and detailed as possible when reporting the descriptions. Drawings were encouraged, and participants were provided with the outline of a human body to facilitate annotation. The importance of accuracy was emphasized, and participants were asked not to guess at anything they were not sure of.

Section 3 requested information relating to the circumstances surrounding the disappearance, such as where the person was seen last, what their intentions were, what their state of mind was, and so on. Participants were also provided with information about why such information is especially important for a missing person investigation. Section 4 requested details regarding the missing person's normal routine and behaviour. Participants were asked to consider the person's usual routine and then consider whether there had been any recent notable changes to this. Rather than asking participants to report a lot of unverifiable information, they were instead asked simply to specify how much information they felt they would be able to

provide on various different aspects if asked (e.g., locations frequented, social life, work habits), on a four-point scale ranging from 'none' to 'a lot'.

Missing Persons Control Form. The Control form was also a self-administered booklet. It contained the same four sections as the SAI-MISSING, with the same instructions to complete the booklet in sequential order. However, despite requesting the same information in response to the same questions and cues, it did so with the absence of (i) an explanation about why the information being requested was important to an investigation, (ii) retrieval support in the form of mental reinstatement of context, (iii) body diagrams to annotate, and (iv) explicit instructions to be as complete, detailed and accurate as possible, and to avoid guessing.

Cooperation Questionnaire. A final questionnaire contained written instructions asking participants to look back through their answers and indicate how willing they would be to share the information they had about the missing person with the police. Each question that had appeared in the reporting booking was listed in order, followed by three options for participants to select between (not at all willing to share it, willing to share some of it, or willing to share it in full).

Procedure

Participants were tested individually, in person. They were aware from the advertising material that the focus of the study was on missing person investigations. On arrival they were told that the study required them to imagine that someone they know well (e.g. friend, partner, colleague), and who they have seen recently, has gone missing and has now been missing for the past 24 hours. All participants consented to taking part, provided demographic information, and were then randomly allocated to either the SAI-MISSING or Control condition. The relevant reporting tool was provided to the participant who was informed that the study was self-paced with no time-limit imposed. The researcher remained present while participants worked through the assigned booklet in case any questions arose. On completion, participants

were handed the Cooperation Questionnaire, that invited them to look back through their answers and indicate how willing they would be to share each piece of information they had about the missing person. All participants were fully debriefed at the end of the study; at this stage they were also invited to provide feedback about the form, such as the clarity of instructions and wording.

Coding

The person-descriptions provided in Section 2 of the forms were coded for number of details reported in relation to the missing person's physical description, clothing, and personal effects. Each unit of information was awarded a point which were then tallied, e.g., "black [1] tattoo [1] of a snowflake [1] in middle [1] of lower [1] back [1]" would be given six points. Details were only coded on first mention. Subjective or ambiguous responses were not coded, e.g., "she's pretty" or "he's average height". Drawings were coded if they provided additional information (e.g., the location of a scar or tattoo that had not been specified before).

A secondary coding was conducted to examine the number of 'unique identifiers' reported. A detail was considered to be a unique identifier if the level of detail provided helped to distinguish this featural or clothing item from other similar items, which in turn would help identify the person from similar others. As such, unique items comprised specific rather than general descriptors. For example, "surgery scar on left elbow" rather than "scar on arm", or "blue Hollister hoodie, with red pattern inside hood" rather than "blue hoodie."

To assess inter-coder reliability, 14 (20%) of randomly selected forms (an equal number from each condition) were coded independently by two raters. Pearson correlations were calculated for the primary and secondary coder for number of physical descriptors ($r = .99$, $p < .001$), the number of details relating to clothing and personal effects ($r = .99$, $p < .001$), the number of unique identifiers relating to physical descriptors ($r = .99$, $p < .001$), and the number of unique identifiers relating to clothing and personal effects ($r = .94$, $p < .001$) .

9

Results

Our dependent variables were (i) the number of person descriptors reported, (ii) the number of unique identifiers reported, and (iii) the percentage of information participants declared that they would be willing to share in full, willing to partially share, or not willing to share. To examine differences between the conditions t-tests were performed as follows.

Person descriptors

Participants in the SAI-MISSING condition reported significantly more physical description details ($M = 37.09$, $SD = 19.56$) in comparison to Control participants ($M = 23.85$, $SD = 12.71$); $t(63) = 3.25$, $p = .002$, $d = 0.81$, 95% CI [5.09, 21.40]. In addition, SAI-MISSING participants reported significantly more details about clothing and personal effects ($M = 32.96$, $SD = 21.25$) in comparison to Control participants ($M = 21.58$, $SD = 15.23$); $t(63) = 2.22$, $p = .032$, $d = 0.61$, 95% CI [0.86, 21.90].

Unique identifiers

There were no significant differences between conditions for the number of unique identifiers reported in relation to physical descriptors, $t(63) = 0.75$, $p = .46$, $d = 0.19$, 95% CI [-1.75, 3.86], or clothing and personal effects, $t(63) = 0.76$, $p = .45$, $d = -0.21$, 95% CI [-1.86, 0.84]. See Table 1 for means and standard deviations.

Table 1 about here

Cooperation with the investigation

Participants were asked to indicate how willing they would be to share the information they had about the missing person in a hypothetical police investigation. We calculated the percentage of information participants declared that they would be willing to share in full, willing to partially share, or not willing to share. There was a ceiling effect in that participants in both conditions were most often willing to share the information they held in full (88.57%

and 93.21% for SAI-MISSING and Control conditions respectively). At times, participants reported that they would only be willing to partially share the information they held (10.39% and 6.00% for SAI-MISSING and Control conditions respectively). This frequently related to personal information such as passwords, or medical history. It was very rare for participants to report that they would not be keen to share information at all (1.03% and 0.79% for SAI-MISSING and Control conditions respectively). Due to the ceiling effect, analyses were not performed.

Discussion

The findings of Experiment 1 confirmed our hypotheses that participants who completed a SAI-MISSING form would report more person descriptors than those who completed a self-administered Control form. Both forms included the same questions and cues to elicit person descriptions, meaning that the enhanced performance in the SAI-MISSING condition is likely due to the additional retrieval support provided by the mental reinstatement of context instructions, and the body diagram. These techniques support the individual in self-generating their own memory cues to help remember the target information (the missing person), which is a particularly effective method of cueing memory (Memon, Meissner, & Fraser, 2010; Wheeler & Gabbert, 2017).

The SAI-MISSING form also differed from the Control form in the instructions to be as complete, detailed and accurate as possible, but to avoid guessing. However, it was not possible in Experiment 1 to determine the accuracy of the information reported. The primary aims of Experiment 2 were therefore to replicate the general methodology of Experiment 1, but to enable a comparison of accuracy rates between the two conditions. For this, participants were requested to attend the study with someone they knew well, after which they were separated into different rooms and asked to imagine that their study-partner had gone missing. We were

then able to determine the accuracy of the person descriptions each participant provided of their partner, as each person was present.

Given that the methodology mirrored Experiment 1, we hypothesized that we would replicate findings related to the amount of person descriptors reported. Further, in relation to accuracy, we hypothesized a similar or higher accuracy rate in the SAI-MISSING condition. Accuracy was expected to be high in both conditions, because both forms use open-ended questions which are known to elicit accurate information (Lamb, Orbach, Hershkowitz, Horowitz, & Abbott, 2007; Oxburgh, Myklebust, & Grant, 2010). However, the additional instruction 'not to guess' in the SAI-MISSING form created the potential for a slightly higher accuracy rate in this particular condition. For example, previous research has shown that people can regulate the accuracy of information they report dependent on the instructions received to adopt a strict versus lenient response criteria (Koriat & Goldsmith, 1996). However, previous research using the SAI has not always observed a difference in accuracy rate in comparison to a simple free-recall instruction (e.g., Gawrylowicz, Memon, Scoboria, Hope, & Gabbert, 2014; Hope et al., 2014; Krix et al., 2016).

Experiment 2

Method

Participants and Design.

A between-subjects design with two conditions (SAI-MISSING, Control) was used. As before, G*Power (Faul, et al., 2007) indicated that a minimum total $n = 52$ was required to reach statistical significance for a large effect size with power $(1 - \beta)$ set at 0.80 and $\alpha = 0.05$. A total of 64 participants, who had not taken part in Experiment 1, were recruited from student and community-based samples via poster, online, and e-mail advertising, and took part in return for either course credit or £5.00. Participants were randomly allocated to an experimental

12

condition whereupon they either completed the SAI-MISSING (n = 32), or a Missing Persons Control Form (n = 32). All participants were fluent in English, age-range = 18 – 59 years (*M* = 29.95, *SD* = 13.07), 47 participants were female.

Participants in the SAI-MISSING condition attended with, and therefore reported information about, partners (n = 12), family members (n = 2), friends (n = 17), and colleagues (n = 1). Those in the Control condition reported information about partners (n = 7), family members (n = 8), friends (n = 14), and colleagues (n = 3). 50% of participants in each condition reported that they knew the person they were describing very well, while the remaining participants in each condition said quite well.

Materials

The same SAI-MISSING and Missing Persons Control Form were used again for Experiment 2. Both were the same as before except for minor edits to improve the clarity (based on feedback from participants in Experiment 1, e.g., a suggestion to use bold font to highlight important instructions). One other small change was to provide space following each question in the Cooperation Questionnaire for participants to explain their answers relating to their willingness to share or withhold information they had about the missing person with the police.

Procedure

Participants responding to the advert about the study were informed that the focus was on missing person investigations, and to be eligible to take part it was necessary to attend the testing session with someone they knew very well, such as a partner, house mate, or close friend. Participants were therefore tested in pairs, in person. On arrival they were immediately separated into different rooms and asked to imagine that the person they came with had been missing for the past 24 hours. All participants consented to taking part, provided demographic information, and were then randomly allocated to either the SAI-MISSING or Control condition. As in Experiment 1, the relevant booklets were provided, with instructions that the

study was self-paced with no time-limit imposed. The researcher remained nearby and available while the participants worked through the assigned booklet in case any questions arose. On completion, participants were handed the Cooperation Questionnaire, that invited them to look back through their answers and indicate how willing they would be to share each piece of information they had about the missing person (not at all willing to share it, willing to share some of it, or willing to share it in full). Participants were also invited to explain their answers.

Once both members of the pair had completed their booklets, they were asked if they were comfortable to swap it with their partner so that he or she could code Section 2 (physical and clothing description) for accuracy. All participants obliged. Instructions were provided to read through the description of themselves and use a highlighter pen to mark any incorrect details (e.g., wearing black jeans instead of blue jeans). The researcher then checked the highlighted errors to ensure this task had been completed thoroughly and correctly. As an additional measure, photographs were taken of each participant and their accessories for coding purposes. All participants were fully debriefed at the end of the study.

Coding

Physical descriptors and clothing and personal effects reported in Section 2 were coded as per Study 1. In addition, each detail reported was coded as correct or incorrect and an accuracy rate was calculated by dividing the total number of correct details by the total count of information recalled. Using the example above, 'black jeans' would be awarded one incorrect point for 'black', and one correct point for 'jeans'.

Fourteen (22%) of the randomly selected forms (an equal number from each condition) were coded independently by two raters to assess inter-coder reliability. Pearson correlations were calculated for the primary and secondary coder for number of accurate physical descriptors ($r = .99$, $p < .001$), the number of accurate details relating to clothing and personal effects ($r = .99$, $p < .001$), the number of unique identifiers relating to physical descriptors (r

= .99, *p* < .001), and the number of unique identifiers relating to clothing and personal effects (*r* = .96, *p* < .001). On the basis of this inter-coder reliability was deemed to be of an acceptable level.

Results

Our dependent variables were the same as in Experiment 1, with the addition of assessing the accuracy of person descriptors. To examine differences between the conditions t-tests were performed as follows.

Person descriptors

Participants in the -SAI-MISSING condition reported significantly more correct physical description details (*M* = 34.25, *SD* = 20.34) in comparison to Control participants (*M* = 22.91, *SD* = 16.60); *t*(62) = 32.44, *p* = .017, *d* = 0.61, 95% CI [2.07, 20.62], as well as reporting significantly more correct details about clothing and personal effects (*M* = 26.44, *SD* = 19.54) in comparison to Controls (*M* = 15.38, *SD* = 12.43); *t*(62) = 2.70, *p* = .009, *d* = 0.68, 95% CI [2.88, 19.25]. The mean number of incorrect details reported were very low, and did not differ between conditions for physical descriptors *t*(62) = 0.00, *p* = 1.00, *d* = 0.00, 95% CI [-0.67, 0.67], or clothing and personal effects, *t*(62) = 1.47, *p* = .15, *d* = -0.37, 95% CI [-2.88, 0.44]. When considering overall accuracy rates, SAI-MISSING participants outperformed Control participants for both physical descriptors, *t*(62) = 2.23, *p* = .03, *d* = 0.56, 95% CI [0.24, 4.38], and clothing and personal effects, *t*(62) = 3.32, *p* = .002, *d* = 0.83, 95% CI [5.94, 23.92].

Unique identifiers

There were no significant differences between conditions for the number of unique identifiers reported in relation to physical descriptors *t*(62) = 0.49, *p* = .62, *d* = -0.12, 95% CI [-2.84, 1.72], or clothing and personal effects, *t*(62) = 0.81, *p* = .42, *d* = 0.20, 95% CI [-0.64, 1.52]. See Table 2 for means and standard deviations.

Table 2 about here

Cooperation with the investigation

Participants were asked to indicate how willing they would be to share the information they had about the missing person in a hypothetical police investigation. As per the findings of Experiment 1, there was a ceiling effect in that participants in both conditions were most often willing to share the information they held in full (96.07% and 90.05% for SAI-MISSING and Control conditions respectively). At times, participants reported that they would only be willing to partially share the information they held (3.23% and 9.00% for SAI-MISSING and Control conditions respectively). Participants rarely reported that they would not share information (0.09% and 0.95% for SAI-MISSING and Control conditions respectively).

Participants were invited to provide a reason for choosing to withhold, or partially share information. Reasons given sometimes related to uncertainty (e.g., "I'm unsure if it's relevant or helpful to report this", "Unsure if this information is correct"), and sometimes due to reluctance to share personal information (e.g., "I'm hesitant to reveal personal and/or sensitive information", "I'm reluctant to share private information", "I'm worried it would make the person look bad"). At times participants reported that they did not feel it was their responsibility to share information, despite being able to (e.g., "Other people are more suited to share this type of information"). On one occasion it was felt that the police might take the case less seriously if the missing person was not categorized as being vulnerable ("I'd be worried that reporting certain information would cause the police to interpret the situation as less dangerous"). At times, participants indicated that the information they shared would depend on how long the person had been missing (e.g., "I would want to know for sure if the person is missing before sharing this type of information with the police", "I'd provide more details about recent life troubles if they were still missing after a week").

General Discussion

Across two experiments we demonstrated that the SAI-MISSING tool elicits significantly more information regarding physical descriptions and descriptions of clothing and personal effects, than a comparison control form. Experiment 2 allowed for us to code the accuracy of reported information and found that the SAI-MISSING tool produced higher accuracy rates than the control form. Obtaining accurate person descriptors in the initial stages of a missing person investigation may be critical for enabling officers to establish the appearance/clothing of who they are looking for (ACPO, 2013). Furthermore, descriptions are vital for CCTV operators tasked with searching for missing persons (ACPO, 2013). The retrieval techniques in the SAI-MISSING were informed by those used in the original SAI (Gabbert et al., 2009) and the Cognitive Interview (Geiselman, Fisher, MacKinnon, & Holland, 1986), including mental reinstatement of context instructions and a body diagram that can be annotated. The mental reinstatement of context mnemonic is based on the encoding-specificity principle of memory, whereby the likelihood of information being recalled accurately corresponds to the overlap between encoded information and the retrieval cue (Geiselman et al., 1986; Tulving & Thomson, 1973). Thus, helping someone remember the last time they were with someone, can help activate personally relevant memories that cue memory for additional and related information.

Despite the difference in the number of person descriptors reported in each condition, this did not extend to the number of unique identifiers reported. This might be because by their very definition, unique or distinctive descriptors are not very common and perhaps did not feature sufficiently in the sample. Indeed, across the two experiments the percentage of descriptors that were coded as unique was relatively small (less than 10%). Thus, while our attempt to code for unique identifiers was a step towards considering the type of information that might be particularly useful in a search for a missing person, we acknowledge that more research is

17

needed to refine this coding. For example, descriptors that are not considered unique in isolation, might become so in combination. An urgent appeal for sightings of a three-year-old boy that had gone missing in London included in the description; "a green coat with a fluffy hood over a black jumper with white stripes, together with blue jeans and blue trainers" (Mann, 2018). Each detail alone is fairly generic (the majority of young children in the UK wear blue jeans), yet in combination they become unique. The description was released to the public, as well as being issued to CCTV operators and the National Police Air Service who assisted in the search. Two hours later officers found a boy matching the description, and he was returned to his parents safe and well. We propose that further research is needed to examine the type of person descriptors that might be most effective in eliciting (accurate) sightings. However, we also acknowledge Lampinen and colleagues' research showing that performance is often incredibly poor in prospective person memory tasks, even with good descriptions and photos (see Lampinen & Moore, 2016).

The majority of participants reported that they were willing to share all the information they had about the missing person in order to aid the hypothetical investigation, with no differences found between the two conditions. Despite this apparent promise of cooperativeness, anecdotal and limited research evidence suggests that missing persons investigations are sometimes unnecessarily impeded by people not being wholly forthcoming with information, especially at the early stages. Families appear unwilling to reveal information, often regarded as 'skeletons in the cupboard', during the first series of police interviews, through embarrassment or perceived unnecessary revelations regarding criminal conduct (Apps, 2019). Thus, it is of interest to examine the data from Study 2 outlining participants reasons for withholding information. Here, uncertainty surrounding the relevance, usefulness, and accuracy of information was a factor. This confirms previous research showing that individuals often withhold information they do not perceive to be of value (Ackerman & Goldsmith, 2008), even in an investigative context (Brewer, Nagesh Vagadia, Hope, & Gabbert, 2018). Further, participants stated that they might

be reluctant to share personal or private information, especially if they felt someone else was better placed to provide this, and unless the person was still missing after a number of days. It is important for the police to know that individuals have access to more information than they might choose to disclose in the initial stages of an investigation. Providing a clear explanation about the value and importance of disclosing information is thus very important in a missing persons investigation so that individuals assisting the police understand that their cooperation could not only expedite the search, but also help inform an accurate risk assessment.

The SAI-MISSING tool has been designed so that individuals can complete it in their own time, allowing time to think, gather information, and respond to the best of their ability. This administrative feature has three potential benefits that we were unable to test in the current research. First, the SAI-MISSING tool provides a means for individuals to be actively involved and engaged in the investigation rather than passively waiting for news about the person they have reported missing. This might help overcome the feeling of helplessness and lack of support that can be experienced (Parr & Stevenson, 2013; Wayland, 2007). Second, those closest to the missing person are best placed to identify aspects of their actions or behaviors which could provide clues relating to the risks they may face and possible places they may be located at, thus it is important to provide opportunities to involve them in the investigation as much as possible. Third, while individuals are spending time collating and reporting further information independently, officers are able to invest more of their time and skills in other aspects of the search. A field trial of the SAI-MISSING tool is necessary to examine these potential benefits.

Given the applied nature of the research, it is important to consider practical limitations. First, it is important to consider accessibility requirements (e.g., difficulties with literacy) that might impede an individual's ability to complete the form without assistance. Second, as with the original SAI, the lack of social support may not be appropriate or appeal to everybody, and

some may prefer to only interact with a police officer. Third, while the SAI-MISSING form can be completed without the assistance of a police officer, it still requires someone to 'deliver' and 'collect' the form (either in person, by email or through a police portal) and process the information.

Despite these limitations, the SAI-MISSING tool has potential to be a valuable resource in a missing persons investigation, enabling the police to respond immediately, efficiently, and effectively. Two experiments have confirmed that the SAI-MISSING form elicits high quality information through the use of psychological techniques known to enhance recall and reporting of relevant information. Future research should address the potential of the tool to support the emotional needs of individuals who have reported someone missing, enabling them to be actively involved in the investigation should they wish. As a whole, the SAI-MISSING is a promising investigatory tool, developed in collaboration with practitioners, that is both theoretically informed and practically relevant.

References

Ackerman, R., & Goldsmith, M. (2008). Control over grain size in memory reporting: With and without satisficing knowledge. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 34,* 1224-1245. https://doi.org/10.1037/a0012938

ACPO (2013). *Interim Guidance on the Management, Recording and Investigation of Missing Persons.* Wyboston: College of Policing.

An Garda Síochána (2009). *Missing Persons Review and Recommendations*. Report of the Garda Síochána Inspectorate: Ireland.

Apps, J., Vesely, L., Alys, L., & Blythe, T. (2014). Two Sides of the Same Coin: Missing and Unidentified People. In X. Mallett, T. Blythe & R. Berry, (Eds.). *Advances in Forensic Human Identification*. 1st Edn. London & New York: CRC Press.

Apps, J. (2019). *(In)visibility and missing persons.* Unpublished draft of professional doctorate thesis. University of Dundee.

Bayliss, A., & Quinton, P. (2013). *Risk, bureaucracy and missing persons: An evaluation of a new approach to the initial police response*. London: College of Policing.

Biehal, N., Mitchell, F., & Wade, J. (2003). *Lost from View: A Study of Missing Persons in the UK*. York: University of York Social Work Research and Development Unit.

Biehal, N., & Wade, J. (2000). Going missing from residential and foster care: Linking biographies and contexts. *British Journal of Social Work, 30,* 211-225. https://doi.org/10.1093/bjsw/30.2.211

Boss, P. (1999). *Ambiguous Loss: Learning to Live with Unresolved Grief.* Harvard University Press, USA.

Boss, P. (2002). Ambiguous loss: working with the families of the missing. *Family Process 41,* 14-7. https://doi.org/10.1111/j.1545-5300.2002.40102000014.x

Boss, P. (2006). *Loss, Trauma and Resilience.* W. W. Norton and Company, New York.

Brewer, N., Nagesh Vagadia, A., Hope, L., & Gabbert, F. (2018). Interviewing Witnesses: Eliciting Coarse-Grain Information. *Law and Human Behavior, 42,* 458-471. https://doi.org/10.1037/lhb0000294

College of Policing, (2018, October 5). *Missing Persons Authorised Professional Practice*. Retrieved from https://www.app.college.police.uk/app-content/major-investigation-and-public-protection/missing-persons/

ECPAT UK and Missing People (2018). *Still in Harm's Way: An update report on trafficked and unaccompanied children going missing from care in the UK.* Retrieved from https://www.ecpat.org.uk/Handlers/Download.ashx?IDMF=27ebad70-3305-4e41-a5ca-7a1f24cba698

Eales, N. (2016). Risk Assessment. In K. Shalev-Greene, & L. Alys, (Eds.). *Missing persons: a handbook of research* (pp. 160-169). London & New York: Taylor & Francis

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175-191. doi:10.3758/BF03193146

Fisher, R. P., & Geiselman, R. E. (1992). Memory-enhancing techniques for investigative interviewing. Springfield, IL: Charles C. Thomas.

Gabbert, F., Hope, L., & Fisher, R. P. (2009). Protecting eyewitness evidence: Examining the efficacy of a self- administered interview tool. *Law and Human Behavior*, *33,* 298-307. doi:10.1007/s10979- 008- 9146- 8

Hope. L., Gabbert, F., Fisher, R. P., & Jamieson, K. (2014). Protecting and enhancing eyewitness memory: the impact of an initial recall attempt on performance in an investigative interview. *Applied Cognitive Psychology, 28*, 304-313. https://doi.org/10.1002/acp.2984

Fyfe, N. R., Stevenson, O., & Woolnough, P. (2015) Missing persons: the processes and challenges of police investigation. *Policing and Society*, *25*, 409-425. https://doi.org 10.1080/10439463.2014.881812

Gawrylowicz, J., Memon, A., Scoboria, A., Hope, L., & Gabbert, F. (2014). Enhancing older adults' eyewitness memory for present and future events with the Self-Administered Interview. *Psychology and Aging*, *29*, 885-890. https://doi.org/10.1037/a0038048

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

Geiselman, R. E., Fisher, R. P., MacKinnon, D. P., & Holland, H. L. (1986). Enhancement of eyewitness memory with the cognitive interview. *The American Journal of Psychology, 99*, 385-401. https://doi.org/10.2307/1422492

Gibb, G. J., & Woolnough, P. (2007). *Missing Persons: Understanding, Planning, Responding.* Aberdeen: Grampian Police.

Hayden, C., & Goodship, J. (2013). Children reported missing to the police: Is it possible to 'risk assess' every incident? *British Journal of Social Work, 13*, 461-472. https://doi.org/10.1093/bjsw/bct150

Hedges, C., & Shalev-Greene, K. (2016). Managing a Missing Person Investigation. In K. Shalev-Greene, & L. Alys, (Eds.). *Missing persons: a handbook of research*. London & New York: Taylor & Francis, pp137-147.

James, M., Anderson, J., & Putt, J., (2008). *Missing Persons in Australia. Research and Public Policy Series*. Australian Institute of Criminology: Canberra.

Hope, L., Gabbert, F., Fisher, R. P., & Jamieson, K. (2014). Protecting and enhancing eyewitness memory: The Impact of an Initial Recall Attempt on Performance in an Investigative Interview. *Applied Cognitive Psychology, 28*, 304-313. https://doi.org/10.1002/acp.2984

Holmes, L., (2008). *Living in Limbo: The experiences, of, and impacts on, the families of missing people*. Missing People: London. Retrieved from http://www.missingpeople.org.uk/limbo

Jago, S., & Pearce, J. (2008). *Gathering Evidence of the Sexual Exploitation of Children and Young People: A Scoping Exercise.* June. Bedford: University of Bedfordshire.

Krix, A., Sauerland, M., Raymaekers, L., Memon, A., Quaedflieg, C., & Smeets, T. (2015). Eyewitness Evidence Obtained with the Self-Administered Interview© Is Unaffected by Stress. *Applied Cognitive Psychology*, *30,* 103-112. https://doi.org/10.1002/acp.3173

Koriat, A., & Goldsmith, M. (1996). Monitoring and control processes in the strategic regulation of memory accuracy. *Psychological Review, 103*, 490-517.

Lamb M. L., Orbach Y., Hershkowitz, I., Esplin P. W., & Horowitz D. (2007). Structured forensic interview protocols improve the quality and informativeness of investigative interviews with children: A review of research using the NICHD Investigative Interview Protocol. *Child Abuse & Neglect, 31*, 1201-1231. http://dx.doi.org/10.1016/j.chiabu.2007.03.021.

Lamb, M. E., Orbach Y., Hershkowitz, I., Horowitz, D., & Abbott C. B. (2007). Does the type of prompt affect the accuracy of information provided by alleged victims of abuse in

forensic interviews? *Applied Cognitive Psychology, 21*, 1117-1130.

https://doi.org/10.1002/acp.1318

Lampinen, J. M., Moore, K. N. (2016). Prospective Person Memory. In C. S. Colls & S.

Morewitz (Eds.) *Missing Persons Handbook*. Springer.

MacLean, C. L., Gabbert, F., & Hope, L. (2019). The Self-Administered Witness Interview

Tool (SAW-IT^TM): Enhancing witness recall of workplace incidents. *Applied Cognitive

Psychology,* 1-12. https://doi.org/10.1002/acp.3568

Mann, T. (2018, February 24), *Metro.* Retrieved from https://metro.co.uk/2018/02/24/urgent-

appeal-missing-boy-3-last-seen-playing-football-near-wembley-shopping-centre-

7339592/

Memon, A., Meissner, C. A., & Fraser, J. (2010). The Cognitive Interview: A meta-analytic

review and study space analysis of the past 25 years. *Psychology, Public Policy, and

Law, 16*, 340-372. https://doi.org/10.1037/a0020518

Missing People (2013). *Family Feedback Survey.* www.missingpeople.org.uk

National Police Chiefs' Council (2015). *Update to missing persons definition – letter to chief

officers.* Devizes: National Police Lead.

National Crime Agency (2019). *Missing Person Data Report 2016/2017.* Available at:

https://www.missingpersons.police.uk/en-gb/resources/downloads/missing-persons-

statistical-bulletins

National Crime Information Center (2016). *NCIC Missing Person and Unidentified Person

Statistics for 2016.* Retrieved from https://www.fbi.gov/file-repository/2016-ncic-

missing-person-andunidentified-person-statistics.pdf/view

Newiss, G., & Traynor, M. (2013). *Taken: A Study of Child Abduction in the UK.* London:

Parents and Abducted Children Together (PACT).

Oxburgh, G. E., Myklebust, T., & Grant, T. D. (2010). The question of question types in police

interviews: a review of the literature from a psychological and linguistic perspective.

International Journal of Speech, Language and the Law, 17, 45-66.

https://doi.org/10.1558/ijsll.v17i1.45

Parr, H., & Stevenson, O. (2013). *Families living with absence: Searching for missing people.*

University of Glasgow.

http://geographiesofmissingpeople.org.uk/downloads/familiesreport.pdf

Royal Canadian Mounted Police (2018). *Canada's Missing.* Retrieved from

http://www.canadasmissing.ca/pubs/2018/index-eng.htm

Shalev-Greene, K., & Pakes, F. (2014). The cost of missing person investigations: implications

for current debates. *Policing, 8,* 27-34. https://doi.org/10.1093/police/pat036

Tulving, E., & Thomson, D. M. (1973). Encoding specificity and retrieval processes in episodic

memory. *Psychological Review, 80*, 352-373. https://doi.org/10.1037/h0020071

Wayland, S. (2007). *Supporting Those Who Are Left Behind: A Counselling Framework to

Support Families of Missing Persons.* National Missing Persons Coordination Centre,

Australian Federal Police, Commonwealth of Australia, ACT.

Wheeler, R. L., & Gabbert, F. (2017). Using Self-Generated Cues to Facilitate Recall: A

Narrative Review. *Frontiers in Psychology, section Theoretical and Philosophical

Psychology.* https://doi.org/10.3389/fpsyg.2017.01830

Table 1. Means and standard deviations for details reported in each condition in Experiment 1

	SAI-MISSING (n =32)	CONTROL (n = 33)
	Mean (SD)	Mean (SD)
Physical Description		
Total details**	37.09 (19.56)	23.85 (12.71)
Unique identifiers	3.72 (5.58)	2.67 (5.73)
Clothing and Personal Effects		
Total details*	32.96 (21.25)	21.58 (15.23)
Unique identifiers	1.07 (1.69)	1.58 (3.01)

*$p < 0.05$; **$p < 0.01$

Table 2. Means and standard deviations for details reported in each condition in Experiment 2.

	SAI-MISSING (n = 32)	CONTROL (n = 32)
	Mean (SD)	Mean (SD)
Physical Description		
Total details correct*	34.25 (20.34)	22.91 (16.60)
Total details incorrect	0.81 (1.53)	0.81 (1.09)
Accuracy rate*	0.98 (0.03)	0.96 (0.05)
Unique identifiers	2.56 (3.13)	3.13 (5.64)
Clothing & Personal Effects		
Total details correct**	26.44 (19.54)	15.38 (12.43)
Total details incorrect	2.28 (2.68)	3.50 (3.86)
Accuracy rate**	0.93 (0.06)	0.78 (0.24)
Unique identifiers	1.28 (2.70)	0.84 (1.42)

*$p < 0.05$; **$p < 0.01$