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The efficacy of the Self-Administered Interview in minimising the misinformation effect

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Abstract

Two experiments investigated the efficacy of the Self-Administered Interview (SAI) in immediate recall and minimising misinformation into later recall. In Experiment 1, participants ($N = 114$) viewed a reconstructed crime video and completed the SAI, Written Free Recall (WFR), or no recall for immediate recall, followed by a Delayed Recall questionnaire 1-to-2 weeks later. Experiment 2 replicated the procedure, except after the delay, participants ($N = 141$) were exposed to misinformation before Delayed Recall. Across both experiments, the SAI enhanced immediate memory, particularly for person details, compared to WFR. However, this initial enhancement did not lead to more correct information after the delay, although it reduced incorrect responses compared to no immediate recall. Surprisingly, neither the SAI nor the WFR reduced susceptibility to misinformation. The findings suggest completing an SAI immediately or soon after witnessing an event could enhance memory recall, reinforcing its potential utility for witnesses.

KEYWORDS
eyewitness memory, eyewitness testimony, investigative interviewing, misinformation effect, Self-Administered Interview

1 | INTRODUCTION

Within the criminal justice system, eyewitness testimony can be critical to an investigation. However, eyewitness memory is highly fallible and reduces in quality over time (Ebbesen & Rienick, 1998). Furthermore, the longer the delay between a witnessed event and initial recall, the more likely it is that a witness will encounter misinformation (Loftus, 1979). Witnesses who encounter misinformation often incorporate it into their memory of the original event, which is known as the 'misinformation effect' (Loftus et al., 1978). Witness statements which are obtained soon after the event are therefore less likely to incorporate errors resulting from exposure to misinformation (Gabbert et al., 2012). However, with limited police resources, obtaining an initial account from a witness is often not possible. There is often a significant delay between the event and first recall which allows for memory degradation of an event to occur and a higher susceptibility to the misinformation effect (Ebbesen & Rienick, 1998). In direct response to this issue, the Self-Administered Interview (SAI; Gabbert et al., 2009) was designed as a recall tool which requires fewer police resources and thus could be administered at the scene of the crime. Consequently, this tool may reduce the opportunity for memory degradation to occur and potentially inoculate eyewitnesses from misinformation.

The SAI (Gabbert et al., 2009) is a paper-based tool comprising five sections with instructions and open-ended questions for witnesses to recall details of a witnessed event, including the sequence of events and any person involved in the crime. Recent developments have extended the reporting format of the SAI into a digital version (Gabbert et al., 2022). Section 1 guides the witness to picture the physical context (i.e., where the witness was located) and personal

context (i.e., what the witness was thinking and how they were feeling) when the initial event was witnessed. Section 2 instructs witnesses to report a complete and accurate account of the incident, including the sequence of actions and events, and the people that were involved. Witnesses are advised not to guess any details which they do not remember and to complete it without the assistance of others. Both the 'Report Everything' and 'Mental Context Reinstatement' are components of the Cognitive Interview (CI; Fisher & Geiselman, 1992). The focus of Section 3 is to obtain detailed descriptions of any offenders involved in the event. Specifically, witnesses are instructed to provide as much detail as possible, without guessing, about the offender's appearance (e.g., clothing, tattoos, hair colour, gender, etc.). Section 3 also includes a diagram of a human figure and space to write any further information relating to the appearance of the offender. Section 4 of the SAI provides witnesses with space to sketch the scene to aid in recall and to preserve any additional spatial details, this may prompt further recollection of information about the incident that may not have already been reported. Finally, Section 5 comprises additional questions related to peripheral details, including descriptions of any other potential witnesses to the crime, details concerning any vehicles present (e.g., colour and registration), and information about the viewing conditions at the scene of the crime (e.g., time of day and weather conditions).

By allowing witnesses to complete the SAI independently at the scene of a crime the pressure on police resources is reduced, whilst simultaneously facilitating an immediate recall to reduce memory degradation. Initial tests of the SAI demonstrated its potential to protect eyewitnesses' memory from decay and distortion during the time interval between an event and a subsequent comprehensive interview (Gabbert et al., 2009). For example, participants who initially completed the SAI recalled significantly more correct details during a future free recall retrieval attempt (following a 1-week delay) than participants who did not provide an initial account of events (Gabbert et al., 2009). These findings are consistent with the 'spreading activation theory' (Anderson, 1983) and the 'testing effect' (Roediger & Karpicke, 2006), both of which suggest that early recall of an event will promote more complete recall in subsequent accounts.

By focusing on the retrieval processes, the SAI can allow witnesses to produce a full and accurate account of an event even after exposure to non-critical misinformation (Horry et al., 2021). The misinformation effect (Loftus et al., 1978) is typically studied using a three-stage paradigm. In this paradigm, participants are exposed to misleading details about a previously witnessed event. On a Delayed Recall test, participants provide their recollection of the original event (Loftus et al., 1978). The misinformation effect takes place when misleading details are reported more frequently compared to when participants are not exposed to those details. It has been suggested that the unsuccessful encoding of aspects of a witnessed event can lead to post-event misinformation being used to fill in any gaps in memory (McCloskey & Zaragoza, 1985).

The misinformation effect could also be explained by the 'fuzzy-trace theory' (Brainerd & Reyna, 1998) which proposes that 'gist' memories are more susceptible to misinformation than detailed 'verbatim' memories. The fuzzy trace theory posits that when witnessing an event, both gist and verbatim memories are simultaneously encoded into memory. The verbatim memory captures the surface form of an event as it physically appeared, whereas the gist memory captures salient meanings of the most important aspects of an event. For example, a verbatim memory may encode an offender carrying a gun, whereas the gist memory would store that the offender was carrying a weapon. Gist memories are more susceptible to misinformation than verbatim memories, this is especially true when both the correct event information and misinformation details are consistent with a gist memory (Brainerd & Reyna, 2019). For example, a witness may correctly remember that the offender had a weapon (i.e., the gist) but then misremembers the offender holding a knife instead of a gun following an encounter with misinformation.

The 'source monitoring framework' (Johnson, 1997) provides a further explanation of the underlying mechanisms of the misinformation effect. This framework suggests that the misinformation effect occurs when witnesses confuse the sources of information and misattribute the memory of a misleading detail to the actual witnessed event. For example, a witness might read in a newspaper article that the offender carried a knife (rather than a gun), and incorrectly recall having seen a knife during the original event.

A small set of studies have examined whether strengthening the initial memory using an immediate SAI can maintain, or even inoculate, the memory of witnesses who have been exposed to post-event information, such as an audio discussion or mock news report (Chevroulet et al., 2021; Gabbert et al., 2012; Gittins et al., 2015; Mackay & Paterson, 2015; McPhee et al., 2014; Paterson et al., 2015). Several of these studies recorded fewer misinformation items in a second recall opportunity when the SAI had been completed immediately after the event compared to when there was no immediate recall opportunity (Gabbert et al., 2012; McPhee et al., 2014). McPhee et al. (2014) considered whether the effectiveness of the SAI for inoculating against the misinformation effect differs for spoken or written versions of the tool. The findings suggested that both spoken and written recall using the SAI are equally effective at preventing misinformation from being incorporated into a witness statement later on (McPhee et al., 2014). However, this study did not compare the written and spoken SAI with a free recall task, which raises the question of whether the inoculation to misinformation was due to the retrieval mechanisms inherent in the SAI or due more simply to the opportunity to recall regardless of the tool. Given that the SAI is shown to be advantageous compared to Written Free Recall (WFR) after a delay (Gawrylowicz et al., 2013, 2014; Kraus et al., 2017; Krix et al., 2014; Pfeil, 2016), it is reasonable to imagine that a similar effect will be obtained when misinformation is added, however, this question has not yet been directly examined.

In this study, we will compare the SAI with the WFR and no recall conditions to determine whether any immediate recall opportunity can reduce the misinformation effect or whether the written SAI provides additional benefits. Furthermore, many previous studies examining the misinformation effect have used audio discussion to present misinformation (Chevroulet et al., 2021; Mackay & Paterson, 2015;

McPhee et al., 2014; Paterson et al., 2015), however, it has been argued that various degrees of influence are attributed to different sources of misinformation (Greene et al., 2022). For example, post-event information encountered through a social source (i.e., listening to an audio discussion) is found to be less convincing (Chevroulet et al., 2021), than that encountered through a non-social source which may be perceived as more credible, such as a written narrative (e.g., news report or witness statement) (Gabbert et al., 2012; Gittins et al., 2015). Therefore for this study, a written narrative as opposed to an audio description will be used for post-event information.

Lastly, research (Chevroulet et al., 2021; Gittins et al., 2015; Mackay & Paterson, 2015; McPhee et al., 2014; Paterson et al., 2015) has attributed a participant's susceptibility to misinformation based on a Delayed Recall test comprising open questions (e.g., what was the sequence of events from beginning to end?). However, open questions have been shown to enhance the misinformation effect by encouraging witnesses to engage in additional processing of the post-event information (Sharman & Powell, 2012). Although ecologically valid, this approach to assessing items of misinformation recalled can make it difficult to draw conclusions about the direct effect of the SAI, WFR, and no recall on the amount and type of misinformation incorporated into memory. For example, witnesses might have incorporated misinformation items into their memory but without being cued may not report this. This means that some misinformation items which were incorporated into memory may remain undetected if not reported.

To test the number of misinformation items incorporated into memory more directly, a series of systematically designed multiple-choice questions (MCQs) will be used in the current study. These MCQs will be based on specific categories of information (i.e., Action, Object, Person, or Setting details) as this will allow us to determine what types of information eyewitnesses are more likely to incorporate into their memory. Based on previous research that have utilised these categories (Gabbert et al., 2009, 2012; Kraus et al., 2017) it is anticipated that variations in recall accuracy will emerge between these categories. When comparing the SAI and a no immediate recall condition (Gabbert et al., 2009), it was found that the SAI reported significantly more correct details than the no immediate recall condition regarding people they observed in the original event. This finding could be explained by the 'context recollection theory' (Searcy et al., 1999), whereby an eyewitness can become familiar with the face of a person, but not necessarily the context in which it was encountered. Thus, the SAI with its context reinstatement instructions should help eyewitnesses remember more details of the persons involved in an event. However, for the other three categories of information (i.e., Action, Object, and Setting), there were no significant differences between the two conditions in terms of the number of accurate details reported.

To this end, Experiment 1 will examine whether the SAI, WFR, and no immediate recall conditions will differ in the number of correct items recalled after a 1-to-2-week delay (without misinformation). To extend the findings of previous research (Chevroulet et al., 2021; Gabbert et al., 2022), this experiment will be held online. Given that only two studies (Chevroulet et al., 2021; Gabbert et al., 2022) explored the effectiveness of the SAI on immediate recall using an online format to date, it is important that a conceptual replication of this paradigm is achieved using an online format adapted for our experiment. Therefore, consistent with previous studies (Gawrylowicz et al., 2013, 2014; Kraus et al., 2017; Krix et al., 2014; Pfeil, 2016) and theories (Anderson, 1983; Roediger & Karpicke, 2006), it was hypothesised that higher accuracy would be shown in the immediate recall and the Delayed Recall questionnaire for those who complete an SAI compared to a WFR, or no recall at all. Once a baseline response is established, this will then be used as a comparison for Experiment 2, which will be identical except for the inclusion of a misinformation narrative before the Delayed Recall questionnaire. As with previous research (Gabbert et al., 2009, 2012; Gawrylowicz et al., 2014; Hope et al., 2014; Krix et al., 2014, 2016) we expected that completing the SAI would not only result in an immediate recall advantage but also fewer misinformation items being recorded in the later recall attempt compared to the no recall condition. In addition, if the structured prompts of the SAI do indeed provide an advantage for strengthening initial memory in comparison to WFR, then we expect that differences in the number of misinformation items recalled after a delay will also favour the SAI.

2 | EXPERIMENT 1

2.1 | Method

2.1.1 | Participants

A priori power analysis using G*Power 3.1 (Faul et al., 2007) was conducted to estimate the necessary sample size. Previous studies on the effect of the SAI on eyewitness testimony have shown a large effect size (Gabbert et al., 2009, 2012). Therefore, this experiment was designed to detect large effect sizes. The specifications for the estimate were (a) *F*-test: ANOVA, (b) large effect size *f*—0.4, (c) $\alpha = .05$, (d) power of 0.95, and (e) the number of groups = 3. The analysis revealed a minimum sample size of 102 participants.

All participants were recruited using an online experiment sign-up system and took part in exchange for course credit. A total of 258 undergraduate psychology students completed Initial Recall (i.e., watching the video and immediate recall; 217 females; 31 males, and 10 defined as 'Other'). Following an immediate SAI, it has been shown that the completeness and accuracy of a delayed recall opportunity peak after a 2-week delay (Chevroulet et al., 2021). Therefore, participants who did not complete Delayed Recall (i.e., the Delayed Recall questionnaire) or completed it after more than 2 weeks were removed from the analysis. Similar to previous research (Chevroulet et al., 2021) we also found that there were no significant differences between the number of correct details reported in the Delayed Recall questionnaire by those that experienced either a 1-or-2-week delay (reported in Supplementary Materials). This resulted in a total of 114 participants (95 females; 13 males, and 6 defined as 'Other'), with

an average age of 22.9 years (SD = 7.54) that completed both parts of the experiment. Of these, 39 participants completed the SAI (32 females, 5 males, and 2 defined as 'Other'), 37 participants completed the WFR (30 females, 4 males, and 3 defined as 'Other'), and 38 participants (33 females, 4 males, and 1 defined as 'Other'), were assigned to the no recall condition.

2.1.2 | Materials

Stimulus video

Participants viewed a 3-min and 7-s video of a reconstructed 'distraction burglary'. The video depicts two males who gain access to an elderly couple's property under false pretences to steal their belongings. The video included a substantial amount of Action, Object, Person, and Setting details. To prevent participants from viewing the material more than once, video controls were disabled during its initial screening, and then automatically advanced to the filler task on its conclusion.

Filler task

A filler task was presented in all conditions to create a short gap between the viewing of the video and completing the SAI or WFR. Therefore, participants were asked to count how many times a specific letter was displayed within a block of letters and numbers.

Self-Administered Interview (SAI) and Written Free Recall (WFR)

The SAI (Gabbert et al., 2009) comprises five sections that contain information and instructions designed to elicit accurate memory recall for a witnessed event. A previous study found no difference in the quality or quantity of information reported in an online version of the SAI compared to the paper-based format (Gabbert et al., 2022), therefore an online version was used for this study. Adjustments had to be made to collect details remotely of the sketch component of the SAI. Participants were instructed to complete their drawing of the scene on a blank piece of paper, take a photograph of it, and email it to the researcher.

For the WFR, participants were simply instructed to recall as many details as they could remember about the stimulus video, including the sequence of actions and events, and the people that were involved. If participants recalled information or specific details out of the order in which they happened, they were still asked to report them as they came to mind and to not leave any details out.

Both the SAI and WFR were administered using an online survey platform that participants could type their responses onto via a computer or mobile device (https://www.qualtrics.com). Clear instructions were also provided to participants to complete these tasks independently without seeking the assistance of others and to refrain from guessing details which they could not remember.

Delayed Recall questionnaire

The Delayed Recall questionnaire was a memory recognition test that comprised 26 multiple-choice questions relating to the previously witnessed event (see Appendix A in Supplementary Materials). Twenty-four of these questions were equally divided between 'Action' items (e.g., What did the perpetrators say they wanted to check?), 'Object' items (e.g., What make was the vehicle the perpetrators got into?), 'Person' items (e.g., What was the surname of the Victims?), and 'Setting' items (e.g., What room are the victims initially directed to?) extracted from the video. Two basic attention-checking questions, 'How many people were directly involved in the crime?'; and 'What gender were the people directly involved in the crime?', were included check on participant engagement. These questions were chosen due to the continuous appearance of two males in the stimulus video and participants should have been able to answer with ease. Participants were excluded from the analysis if either of the attention-checking questions were answered incorrectly. For all 26 questions, six possible choices were randomly presented which included one correct response, four incorrect responses, and one 'I don't know' option.

2.1.3 | Procedure

After gaining consent and completing demographic questions, participants viewed the crime video. Following this, participants then completed a 3-min filler task to prevent rehearsal of the stimulus video and mitigate any recency effect (Geiselman et al., 1985). Participants were then randomly allocated to one of the three experimental conditions: the SAI, WFR, or no recall condition. This task was self-paced for the SAI and WFR conditions, for those in the no recall condition participants were simply advised that the researcher would be in contact in 1 week to ask some further questions. The second part of the experiment took place 1-to-2-weeks after the participants had viewed the crime video. The order of the Delayed Recall questions was randomised for each participant. Participants responded to the questions at their own pace, however, they had to respond to all questions before they could complete the task.

2.1.4 | Data coding

For the first part of the experiment, the SAI and WFR responses were coded for quantity and accuracy. As in Gabbert et al. (2009), responses were coded using a scoring template (see Appendix B in Supplementary Materials) that classifies each piece of information in the stimulus video as an Action (A), Object (O), Person (P), or Setting (S) detail. For example, the stimulus video showed one of the male perpetrators opening a cabinet with a white door that was located below the staircase. This was coded as male (1P; one person detail) opens (1A; one action detail) white door and cabinet (2O; two object details) below the staircase (1S; one setting detail). An item was coded as 'correct' if it was present in the video and described correctly, and 'incorrect' if it was present in the stimulus video but described incorrectly or if it was not present at all. Subjective details (e.g., 'he was acting suspiciously') were not coded for analysis. Given

the potential differences in coding the qualitative content from the Initial Recall, 25 of the participants' accounts were also scored by a second coder to establish inter-rater reliability. Correlations indicated a significant agreement for Initial Recall on the amount of correct $r = .96$, $p < .001$, and incorrect details $r = .91$, $p < .01$. For the Delayed Recall questionnaire, an overall percentage accuracy was calculated for correct, incorrect, and 'don't know' responses given by each participant. The percentage of each response was based on how many times a correct, incorrect, or 'don't know' response was selected by participants. For example, should a participant select three correct responses (out of six questions) in the Object category, it would be calculated that they incorporated 50% of the correct responses pertaining to that category.

2.2 | Results

2.2.1 | Initial recall

Correct responses

A 2 (Condition: SAI vs. WFR) × 4 (Categories: Action, Object, Person, Setting) mixed factor ANOVA revealed a main effect for category on the number of correct details reported, $F(2.40, 177.58^{1}) = 157.49$, $p < .001$, $\eta_p^2 = 0.68$ (see Table 1; Post-hoc tests reported in Supplementary Materials). A main effect of condition was also found, $F(1, 74) = 14.07$, $p < .001$, $\eta_p^2 = 0.16$, such that there was an overall greater number of correct details for those who completed the SAI compared to WFR.

A significant interaction between the condition and categories was also found, $F(2.40, 177.58) = 26.71$, $p < .001$. To further analyse this interaction, Bonferroni-adjusted independent *t*-tests were conducted (with alpha corrected at $p < .01$, $\alpha/4$) comparing each condition for the four different categories. Analysis showed that the SAI and WFR differed significantly for Person details, $t(74) = 7.99$, $p < .001$, and all other comparisons were not significant, all $ts \leq 0.86$, and all $ps \geq 0.18$. These findings suggest that participants who complete the SAI produce more correct details overall compared to WFR and that these differences are most pronounced for Person details.

TABLE 1 Group means (and standard error) for correct and incorrect details for each category across all recall conditions in Initial Recall.

	SAI	WFR	Overall mean
Action			
Correct	17.82 (1.15)	16.41 (1.19)	17.13 (0.83)
Incorrect	0.08 (0.05)	0.19 (0.06)	0.13 (0.04)
Object			
Correct	9.36 (0.71)	8.70 (0.73)	9.03 (0.51)
Incorrect	0.41 (0.08)	0.19 (0.08)	0.30 (0.06)
Person			
Correct	18.51 (0.94)	7.76 (0.96)	13.14 (0.67)
Incorrect	0.28 (0.08)	0.14 (0.09)	0.21 (0.06)
Setting			
Correct	2.18 (0.24)	2.65 (0.24)	2.41 (0.17)
Incorrect	0.00 (0.02)	0.03 (0.02)	0.01 (0.01)
All categories			
Correct	11.97 (0.58)	8.88 (0.59)	10.42 (0.41)
Incorrect	0.19 (0.03)	0.14 (0.03)	0.16 (0.02)

Incorrect responses

A 2 (Condition: SAI vs. WFR) × 4 (Categories: Action, Object, Person, Setting) mixed factor ANOVA revealed a main effect for category on the number of incorrect details reported, $F(2.45, 180.95) = 7.23$, $p < .001$, $\eta_p^2 = 0.09$ (see Table 1; Post-hoc tests reported in Supplementary Materials). There was no main effect of condition, $F(1, 74) = 1.47$, $p = .23$, $\eta_p^2 = 0.02$.

A significant interaction was found for conditions and category, $F(2.45, 180.95) = 2.90$, $p < .05$. To further analyse this interaction, paired *t*-tests were conducted (with alpha corrected at $p < .01$, $\alpha/6$) comparing each category within the SAI and WFR condition. Significant differences in the number of incorrect details for each category in the SAI were found for Action and Object, $t(38) = -3.93$, $p < .001$, and Object and Setting details, $t(38) = 5.14$, $p < .001$. All other categories, namely Action and Person, $t(38) = -1.75$, $p = .09$, Action and Setting, $t(38) = 1.78$, $p = .08$, Object and Person, $t(38) = 1.00$, $p = .32$, and Person and Setting, $t(38) = 2.72$, $p = .01$, details were not significant. For the WFR condition, a significant difference was found when comparing Action and Setting details $t(36) = 2.64$, $p < .01$, no other differences were found all $ts \leq 1.97$, and all $ps \geq 0.06$. Further *t*-tests were conducted (with alpha corrected at $p < .01$, $\alpha/4$) comparing the SAI and WFR separately for each of the four categories. Analysis showed that the SAI and WFR did not differ significantly on any comparison, all $ts \leq 2.00$, and all $ps \geq 0.05$. See Table 1 for the overall average number of correct and incorrect responses broken down by category.

2.2.2 | Delayed recall

Correct responses

A 3 (Condition: SAI, WFR, no recall) × 4 (Categories: Action, Object, Person, Setting) mixed factorial ANOVA revealed a main effect for category, $F(3, 333) = 99.53$, $p < .001$, $\eta_p^2 = 0.47$. Post-hoc *t*-test (with alpha corrected at $p < .01$, $\alpha/6$) revealed the highest number of correct responses for Setting which differed significantly from Action, $t(113) = -5.77$, $p < .001$, Object, $t(113) = -8.30$, $p < .001$, and Person, $t(113) = -15.52$, $p < .001$. The next highest number of correct responses was for Action and Object, which did not differ significantly from each other, $t(113) = 2.71$, $p = 0.01$. Both Action and Object differed significantly from Person, which held the lowest accuracy, $t(113) = 10.46$, $p < .001$, and $t(113) = 8.59$, $p < .001$, respectively.

The analysis did not find a main effect of condition, $F(2, 111) = 2.28$, $p = 0.11$, $\eta_p^2 = 0.04$, and no significant interaction was revealed between conditions and each category on the number of

correct responses provided, $F(6, 333) = 1.77$, $p = .10$, $\eta_p^2 = 0.03$. Thus, although the pattern suggests that the SAI and WFR may provide a small advantage in comparison to not completing any immediate recall, this did not hold up to the analysis.

Incorrect responses

The same analysis was performed for incorrect responses. This found a main effect of category, $F(2.95, 327.92^1) = 8.30$, $p < .001$, $\eta_p^2 = 0.07$. Post-hoc *t*-test (with alpha corrected at $p < .01$, $\alpha/6$) revealed the lowest number of incorrect responses were given for Setting when compared to Action $t(113) = 3.71$, $p < .001$, Object $t(113) = 3.79$, $p < .001$, and Person $t(113) = 3.81$, $p < .001$. All other comparisons namely, Action and Object, $t(113) = -0.43$, $p = .67$, Action and Person, $t(113) = -0.77$, $p = .44$, and Object and Person responses, $t(113) = -0.31$, $p = .76$ were not significant. A main effect was also found for condition, $F(2, 111) = 7.20$, $p = .001$, $\eta_p^2 = 0.12$, such that there were more incorrect responses in the no recall condition compared to the SAI and WFR. There was no significant interaction between conditions and category, $F(5.91, 327.92) = 0.96$, $p = .45$, $\eta_p^2 = 0.45$. These findings indicate that more incorrect responses were made when participants did not have the opportunity to provide an initial recall.

'Don't know' responses

In terms of 'don't know' responses, a main effect of category, $F(2.15, 238.53) = 91.97$, $p < .001$, $\eta_p^2 = 0.45$ was recorded. To further analyse this effect, paired *t*-tests were conducted (with alpha corrected at $p < .01$, $\alpha/6$) comparing each category. This analysis revealed that the highest number of 'Don't Know' responses were attributed to Person content compared to Object (the second highest), $t(113) = -8.86$, $p < .001$, Action, $t(113) = -10.35$, $p < .001$, and Setting (the lowest), $t(113) = 13.01$, $p < .001$. Setting differed significantly from Action, $t(113) = 4.35$, $p < .001$, and Object, $t(113) = 6.37$, $p < .001$. However, Action and Object did not differ, $t(113) = -2.96$, $p = .01$. There was no main effect of condition, $F(2, 111) = 2.67$, $p = .07$, $\eta_p^2 = 0.05$, and no significant interaction between conditions and category, $F(4.30, 238.53) = 1.47$, $p = .21$, $\eta_p^2 = 0.03$. The percentage means and standard error for each variable are summarised in Table 2.

2.3 | Discussion

This Experiment examined whether an initial recall using the SAI could enhance future retrieval attempts. In total, 114 participants were randomly allocated to either the SAI, WFR, or no recall condition after witnessing a stimulus event. Participants in the SAI and WFR conditions completed an initial recall attempt which occurred immediately after viewing the stimulus. One-to-two weeks later, all participants completed a delayed recall questionnaire.

In the Initial Recall, a significant effect of condition was found, such that the SAI condition yielded an overall greater number of correct details compared to WFR. This effect was driven by the SAI producing a significantly greater number of Person details compared to the WFR while there were no differences across any of the other categories. No differences were found between SAI and WFR for incorrect responses. These results are in line with earlier research

TABLE 2 Group means (and standard error) for correct, incorrect, and 'don't know' responses for each category across all recall conditions in Delayed Recall.

	SAI	WFR	No recall	Overall mean
Action				
Correct	60.26 (3.25)	66.67 (3.34)	59.65 (3.29)	62.13 (1.90)
Incorrect	23.50 (2.97)	26.13 (3.05)	32.02 (3.01)	27.22 (1.74)
Don't know	16.24 (3.15)	7.20 (2.10)	8.33 (1.86)	10.58 (1.42)
Object				
Correct	55.56 (3.19)	63.06 (3.28)	50.88 (3.23)	56.50 (1.87)
Incorrect	23.93 (3.32)	24.32 (3.41)	35.97 (3.36)	28.07 (1.94)
Don't know	20.51 (3.49)	12.62 (2.18)	13.15 (2.68)	15.43 (1.65)
Person				
Correct	38.46 (3.40)	31.08 (3.49)	34.21 (3.45)	34.58 (1.99)
Incorrect	21.80 (3.38)	29.73 (3.47)	35.09 (3.43)	28.87 (1.98)
Don't know	39.74 (3.76)	39.19 (4.29)	30.70 (4.64)	36.55 (2.45)
Setting				
Correct	77.35 (3.55)	81.08 (3.65)	71.05 (3.60)	76.50 (2.08)
Incorrect	17.52 (3.10)	13.06 (3.18)	25.44 (3.14)	18.67 (1.81)
Don't know	5.13 (1.85)	5.86 (1.73)	3.51 (1.56)	4.83 (1.00)
All categories				
Correct	57.91 (2.14)	60.47 (2.19)	53.95 (2.17)	57.44 (1.25)
Incorrect	21.69 (2.07)	23.21 (2.13)	32.13 (2.10)	25.71 (1.21)
Don't know	20.40 (2.00)	16.32 (2.05)	13.92 (2.03)	16.85 (1.17)

(Gawrylowicz et al., 2013, 2014; Kraus et al., 2017; Krix et al., 2014; Pfeil, 2016) that showed undertaking an immediate SAI following a witnessed event provided higher accuracy rates than undertaking a WFR. Given the differences in memory retrieval support between the SAI and WFR, this finding contributes to the argument that those completing the SAI develop a strengthened memory trace for an event (Krix et al., 2014).

Consistent with the context recollection theory (Searcy et al., 1999), it is possible the instructions provided to participants in the Person section of the SAI may have directed attention to aspects of the person which would otherwise not be recalled freely and could explain why the SAI produced the greater number of person details than the WFR in initial recall. This finding and explanation are in line also with earlier research demonstrating that participants who completed the SAI performed better in a subsequent person identification line-up than those who did not have an initial recall opportunity or who had filled in a WFR (Pfeil, 2016). Although we expected that this immediate recall strengthened the memory of the witness which would lead to more accurate recall after a delay (Gawrylowicz et al., 2013, 2014; Kraus et al., 2017; Krix et al., 2014; Pfeil, 2016), this was not found to be the case here.

Neither the SAI nor the WFR significantly increased the number of correct responses compared to the no recall condition for the Delayed Recall. However, we detected a difference in number of incorrect responses. Specifically, more incorrect responses were recorded for the no recall condition. Thus, although the differences in the number of correct responses for the SAI and WFR were not significantly higher than in the no recall condition, the pattern does suggest a trend in the expected direction. We discuss possible reasons for this in the General Discussion. It should also be noted that this Experiment provided a sufficient conceptual replication of the online paradigm (Chevroulet et al., 2021; Gabbert et al., 2022) and supported established differences between the SAI and WFR in an initial recall.

3 | EXPERIMENT 2

Although Experiment 1 did not find an advantage of the SAI in our Delayed Recall test, it is possible that differences emerge when post-event misinformation is introduced (Gabbert et al., 2012; Gittins et al., 2015). Post-event information should place additional demands on memory storage of the event, and immediate recall may strengthen the memory enough to withstand such interference. Therefore, Experiment 2 will specifically investigate whether an initial recall using the SAI can protect against the misinformation effect in a subsequent recall attempt. To ascertain this, all participants were presented with a misinformation narrative before completing a subsequent recall test after a delay. In the Delayed Recall questionnaire, we replaced one of the incorrect response options for eight of the multiple-choice questions, with information that was reported only in the post-event misinformation narrative. If participants incorporated misinformation into their memory, we expected them to choose this incorrect response.

Consistent with previous literature (Gabbert et al., 2012; Gittins et al., 2015; McPhee et al., 2014) we hypothesised that the misinformation effect would be reduced amongst those who completed an immediate SAI compared to participants in the no recall condition. Specifically, we expected fewer misinformation options to be selected in the Delayed Recall questionnaire. We also examined whether there were any differences between the SAI and WFR which would indicate that one of these tools is more effective at protecting against interference from the post-event information.

3.1 | Method

3.1.1 | Participants

A priori power analysis using G*Power 3.1 (Faul et al., 2007) was conducted to estimate the necessary sample size. Previous studies on the effect of the SAI on eyewitness testimony have shown a large effect size (Gabbert et al., 2009, 2012). Therefore, this experiment was designed to detect large effect sizes. The specifications for the estimate were (a) *F*-test: ANOVA, (b) large effect size *f*—0.4, (c) $\alpha = .05$, (d) power of 0.95, and (e) the number of groups = 3. The analysis revealed a minimum sample size of 102 participants.

All participants were recruited using an online experiment sign-up system and took part in exchange for course credit. A total of 197 undergraduate psychology students completed Initial Recall (165 females; 26 males, and 6 defined as 'Other'). Participants who did not complete the Delayed Recall (i.e., the Delayed Recall questionnaire) or completed it after more than 2 weeks were removed from the analysis. Again, no significant differences were found between the number of correct details reported in the Delayed Recall questionnaire by those that experienced either a 1-or-2-week delay (reported in Supplementary Materials). This resulted in a total of 141 participants (120 females; 16 males, and 5 defined as 'Other'), with an average age of 21.1 years (SD = 4.48) that completed both parts of the experiment. Of these, 43 participants completed the SAI (32 females, 8 males, and 3 defined as 'Other'), 40 participants completed the WFR (37 females, 3 males), and 58 participants (51 females, 5 males, and 2 defined as 'Other'), were assigned to not complete an initial interview.

3.1.2 | Materials

Experiment 2 employed the same materials as Experiment 1 with the addition of the misinformation narrative and a modified recall questionnaire. The misinformation narrative included a summary of the stimulus video that was presented in the form of a news article which contained some accurate and inaccurate details about the event. A total of eight details relating to Action, Object, Person, and Setting were changed. For example, the narrative stated that the males parked a *Silver Ford Focus* at the time of the incident. The stimulus video showed this vehicle to be a *Silver Peugeot*. The Delayed Recall

questionnaire was identical to the one used in Experiment 1, with one difference. One of the 'incorrect' options of eight of the multiple-choice questions was replaced with incorrect information which was presented in the misinformation narrative (for example, *Silver Ford Focus*). An equal number of the questions in the Delayed Recall questionnaire were based upon details that a participant would have only encountered in the stimulus video, and details that would have been encountered in both the stimulus video and misinformation narrative.

3.1.3 | Procedure

This experiment consisted of two parts. During Initial Recall, which was identical to Experiment 1, all participants watched the stimulus video of the reconstructed distraction burglary followed by a 3-min filler task. According to their randomly allocated condition, participants either completed the SAI, WFR, or, were asked to return for Delayed Recall in 1 week. In Delayed Recall, participants were presented with the misinformation narrative about the distraction burglary they had viewed in Initial Recall and then completed a filler task. Participants then completed the Delayed Recall questionnaire.

3.1.4 | Data coding

The procedure for coding the data for both experiments was identical to Experiment 1. To establish inter-rater reliability, 30 of the participants' accounts were also scored by a second coder. The inter-rater reliability was high for Initial Recall on the amount of correct $r = .93$, $p < .001$ and incorrect details $r = .90$, $p < .01$. For the Delayed Recall questionnaire, a misinformation category was added to capture the percentage of inaccurate information from the narrative. Each category had two questions containing a misinformation response. The percentage of misinformation was based on how many times the misinformation response was selected by participants. For example, should a participant select both misinformation responses in the Action category, it would be calculated that they incorporated 100% of the misinformation pertaining to that category.

3.2 | Results

3.2.1 | Initial recall

Correct responses

A 2 (Condition: SAI vs. WFR) × 4 (Categories: Action, Object, Person, Setting) mixed factor ANOVA revealed a main effect of category on the number of correct details reported, $F(2.14, 173.51) = 159.43$, $p < .001$, $\eta_p^2 = 0.66$ (Post-hoc tests reported in Supplementary Materials).

Further to this, a main effect of condition was also found, $F(1, 81) = 10.72$, $p = .002$, such that the SAI produced a greater number of correct details than the WFR. An interaction was also present between the conditions and each category, $F(2.14, 173.51) = 36.92$, $p < .001$. To further analyse this interaction, independent *t*-tests were conducted (with alpha corrected at $p < .01$, $\alpha/6$) comparing each condition on the different categories. Analysis showed that the SAI produced a greater number of correct person details compared to the WFR, $t(81) = 7.39$, $p < .001$, while all other comparisons were not significant, all ts ≤ 1.52, and all ps ≥ 0.13. These findings replicate those described in Experiment 1, such that participants who completed the SAI generated a greater number of correct items overall compared to those who were instructed to use the WFR. This main effect was driven by the SAI producing on average about twice the number of correct person details compared to WFR.

Incorrect responses

The analogous analysis was conducted for the incorrect details. A 2 (Condition: SAI vs. WFR) × 4 (Categories: Action, Object, Person, Setting) mixed factor ANOVA revealed a main effect of category on the number of incorrect details reported, $F(2.26, 182.92) = 9.33$, $p < .001$, $\eta_p^2 = 0.10$ (Post-hoc tests reported in Supplementary Materials). The ANOVA also revealed a main effect of condition, $F(1, 81) = 7.34$, $p = .01$, $\eta_p^2 = 0.08$, whereby the SAI produced a greater number of incorrect details compared to the WFR. No significant interaction was found between the condition and category, $F(2.26, 182.92) = 1.26$, $p = .29$, $\eta_p^2 = 0.02$. The initial recall results are summarised in Table 3.

3.2.2 | Delayed recall

Correct responses

A 3 (Condition: SAI, WFR, no recall) × 4 (Categories: Action, Object, Person, Setting) mixed factorial ANOVA revealed a main effect of

TABLE 3 Group means (and standard error) for correct and incorrect details for each category across all recall conditions in Initial Recall.

	SAI	WFR	Overall mean
Action			
Correct	14.70 (1.08)	16.20 (1.12)	15.45 (0.78)
Incorrect	0.12 (0.04)	0.03 (0.04)	0.07 (0.03)
Object			
Correct	8.12 (0.62)	6.75 (0.65)	7.43 (0.45)
Incorrect	0.37 (0.07)	0.15 (0.08)	0.26 (0.05)
Person			
Correct	18.23 (1.06)	6.98 (1.10)	12.60 (1.89)
Incorrect	0.26 (0.07)	0.13 (0.07)	0.19 (0.05)
Setting			
Correct	1.95 (0.20)	1.83 (0.21)	1.89 (0.14)
Incorrect	0.02 (0.02)	0.00 (0.02)	0.12 (0.12)
All categories			
Correct	10.75 (0.60)	7.94 (0.62)	9.34 (0.43)
Incorrect	0.19 (0.03)	0.08 (0.03)	0.13 (0.02)

category, $F(3, 414) = 107.17$, $p < .001$, $\eta_p^2 = 0.44$. To further analyse this effect, Bonferroni-adjusted paired *t*-tests were conducted (with alpha corrected at $p < .01$, $\alpha/6$) comparing each category. This analysis revealed that more correct details were recorded for Setting than Action $t(140) = -7.85$, $p < .001$, Object $t(140) = -7.07$, $p < .001$, and Person $t(140) = -18.07$, $p < .001$. This was followed by Object that recorded higher accuracy rates compared to Person $t(140) = 11.36$, $p < .001$. Person details recorded the lowest number of correct details when compared to Action $t(140) = 9.31$, $p < .001$. No significant difference was found between Action and Object $t(140) = -1.26$, $p = .21$. No main effect of condition, $F(2, 138) = 0.98$, $p = .38$, $\eta_p^2 = 0.01$, and no interaction was found, $F(6, 414) = 0.75$, $p = .61$, $\eta_p^2 = 0.01$.

Incorrect responses

The same analysis was performed for incorrect responses. This did not find a main effect of category, $F(3, 414) = 1.86$, $p = .14$, $\eta_p^2 = 0.01$. However, a main effect was found for condition, $F(2, 138) = 5.38$, $p = .01$, $\eta_p^2 = 0.07$, whereby the no recall condition produced a greater percentage of incorrect responses compared to the WFR and SAI. There was no significant interaction between conditions and category, $F(6, 414) = 1.13$, $p = .35$, $\eta_p^2 = 0.02$.

'Don't know' responses

With regards to 'don't know' responses, a main effect of category ($F(2.34, 323.54) = 98.47$, $p < .001$, $\eta_p^2 = 0.42$) was found. To further analyse this effect, paired *t*-tests were conducted (with alpha corrected at $p < .01$, $\alpha/6$) comparing each category. Our analysis showed that more 'don't know' responses were provided for Person details than Action $t(140) = -10.17$, $p < .001$, Object $t(140) = -10.53$, $p < .001$, and Setting $t(140) = 14.00$, $p < .001$. The lowest number of 'don't know' responses were provided for Setting details when compared to Object $t(140) = 5.29$, $p < .001$, and Action $t(140) = 4.11$, $p < .001$. No significant difference was found between Action and Object $t(140) = -0.51$, $p = .61$. There was no significant main effect of condition, $F(2, 138) = 2.25$, $p = .11$, $\eta_p^2 = 0.03$, and no significant interaction between conditions and category on the number of 'don't know' responses, $F(4.69, 323.54) = 1.48$, $p = .20$, $\eta_p^2 = 0.02$.

Misinformation responses

Of most interest here is the comparison between the three conditions on the number of misinformation items that were selected in place of alternative correct and incorrect options. A 3 (Condition: SAI, WFR, no recall) × 4 (Categories: Action, Object, Person, Setting) mixed factorial ANOVA revealed a main effect of category, $F(2.84, 391.77) = 33.94$, $p < .001$, $\eta_p^2 = 0.20$. Post-hoc *t*-tests (with alpha corrected at $p < .01$, $\alpha/6$) revealed that the lowest number of misinformation responses were given for Setting details when compared to Action $t(140) = 6.80$, $p < .001$, Object $t(140) = 9.48$, $p < .001$, and Person $t(140) = 10.28$, $p < .001$. No significant differences were found between Action and Object, $t(140) = -0.89$, $p = .38$, Action and Person, $t(140) = -2.04$, $p = .04$, and Object and Person, $t(140) = -1.37$, $p = .17$. No main effect of condition was found, $F(2, 138) = 0.04$, $p = .96$, $\eta_p^2 = 0.001$), and there was no significant interaction between conditions and category, $F(5.68, 391.77) = 0.25$, $p = .95$, $\eta_p^2 = 0.004$. These findings suggest that completing an immediate recall task did not prevent misinformation from being incorporated into memory. Table 4 summarises the mean percentage accuracy for the recall questionnaire.

3.3 | Discussion

In Experiment 2 we examined whether an initial recall using the SAI can reduce the number of misinformation items incorporated into memory after a witness has been exposed to post-event information. For this, three groups of participants viewed a staged crime video, and participants in the SAI and WFR conditions completed an immediate recall attempt while the third group did not. One week after viewing the stimulus video, participants from all three groups were presented with post-event information containing some correct information as well as some misinformation before completing a Delayed Recall questionnaire.

The findings from Experiment 1 were replicated in Experiment 2. Specifically, we found a positive effect of SAI on immediate recall accuracy in comparison to the WFR which was driven by the SAI producing about twice as many correct person details than the WFR (Ebbesen & Rienick, 1998; Gabbert et al., 2009; Pfeil, 2016). As in Experiment 1, this advantage did not extend to the number of correct responses in the second recall attempt 1-to-2 weeks later. However, there was again a difference in the number of incorrect responses, such that those who did not complete immediate recall (i.e., the no recall condition) selected more incorrect items compared to those who completed the SAI or WFR.

The main aim of Experiment 2 was to determine whether differences between the three conditions emerged for the misinformation items. However, despite the benefits of SAI on immediate recall, this did not translate to a reduction in the number of misinformation items selected in their subsequent recall attempt. To exclude the possibility that the post-event information was simply not effective, we performed a manipulation check (reported in the Supplementary Materials) which revealed that the misinformation was successful in providing participants with a source of information which was incorporated into their memory. Specifically, we found more correct responses for items mentioned in the post-event narrative that were accurate as compared to inaccurate items.

Indeed, the incorporation of misinformation is a divergence from previous literature that has found the SAI to protect against misinformation (Gabbert et al., 2012). It could be argued that details in the stimulus video were not encoded by participants in the first place, thereby leading to misinformation filling the gaps in memory (McCloskey & Zaragoza, 1985). It is also possible that participants relied on their gist recollection of the stimulus video during the Delayed Recall questionnaire, and therefore believed the misinformation narrative to be consistent with their original memory (Brainerd & Reyna, 2019).

TABLE 4 Group means (and standard error) for correct, incorrect, 'don't know', and misinformation responses for each category across all recall conditions in Delayed Recall.

	SAI	WFR	No recall	Overall mean
Action				
Correct	53.49 (3.46)	59.58 (3.58)	52.01 (2.98)	55.03 (1.93)
Incorrect	20.54 (2.89)	20.00 (2.99)	28.45 (2.49)	23.00 (1.62)
Don't know	14.34 (2.26)	9.17 (2.35)	9.48 (1.95)	11.00 (1.27)
Misinformation	33.72 (6.75)	33.75 (7.00)	30.17 (5.81)	32.55 (3.78)
Object				
Correct	57.36 (3.13)	60.42 (3.24)	55.46 (2.69)	57.75 (1.75)
Incorrect	18.22 (2.47)	16.25 (2.56)	21.55 (2.13)	18.67 (1.38)
Don't know	12.02 (2.26)	11.25 (2.35)	11.78 (1.95)	11.68 (1.27)
Misinformation	36.05 (5.47)	37.50 (5.67)	33.62 (4.71)	35.72 (3.06)
Person				
Correct	32.17 (2.85)	32.50 (2.96)	33.62 (2.46)	32.76 (1.60)
Incorrect	13.18 (2.99)	21.25 (3.10)	23.56 (2.58)	19.33 (1.67)
Don't know	41.09 (3.99)	32.92 (4.14)	29.02 (3.44)	34.34 (2.23)
Misinformation	41.86 (5.40)	38.75 (5.60)	41.38 (4.65)	40.66 (3.02)
Setting				
Correct	75.58 (3.47)	73.75 (3.59)	69.54 (2.99)	72.96 (1.94)
Incorrect	14.73 (2.84)	21.25 (2.94)	22.70 (2.44)	19.56 (1.59)
Don't know	6.98 (1.78)	3.75 (1.84)	4.89 (1.53)	5.20 (0.99)
Misinformation	6.98 (2.77)	3.75 (2.87)	8.62 (2.39)	6.45 (1.55)
All categories				
Correct	54.65 (2.08)	56.56 (2.16)	52.66 (1.79)	54.62 (1.16)
Incorrect	16.67 (1.74)	19.69 (1.80)	24.07 (1.50)	20.14 (0.97)
Don't know	18.61 (1.82)	14.27 (1.89)	13.79 (1.57)	15.56 (1.02)
Misinformation	29.65 (3.40)	28.44 (3.52)	28.45 (2.92)	28.85 (1.90)

4 | GENERAL DISCUSSION

Both Experiments suggest that the SAI is an effective investigative interview tool for obtaining enhanced information when immediately administered to eyewitnesses compared to the less structured WFR technique. However, the initial enhanced memory did not directly translate to improved accuracy, measured by the number of correct details, in a later retrieval attempt following a 1-to-2-week delay. There were, however, fewer incorrect responses made compared to those in the no recall condition. Contrary to our prediction, neither the SAI nor the WFR were able to reduce participants' susceptibility to the misinformation effect.

The finding that the SAI tool produces more accurate information when administered immediately after an event is consistent with earlier research (Gawrylowicz et al., 2013, 2014; Horry et al., 2021; Kraus et al., 2017; Krix et al., 2014; Pfeil, 2016). This advantage is most likely achieved because of the structured prompts which cue memory retrieval for aspects of memory which may not otherwise be spontaneously recalled. However, the enhanced number of recalled items in Initial Recall did not extend to better performance of correct responses in Delayed Recall. This is in contrast with earlier findings suggesting that those who completed an initial SAI performed better after a delayed recall compared with those who did not complete any immediate recall task (Gabbert et al., 2009). In this study, we did however record a reduction in incorrect responses for the SAI and WFR conditions, compared to no recall, following the delay. It is possible that initial recall served to guard against false confidence in 'incorrect' information, therefore participants were more likely to record 'don't know' as opposed to choosing an 'incorrect' item. This would suggest that participants may have also been less likely to accept misinformation items presented in the post-event narrative if they completed some initial recall, but this was also not evident in Experiment 2.

Of interest to note was that although a higher number of correct Person details were provided in the Initial Recall, this was not consistent in the Delayed Recall with lower Person details being recalled when compared to the other categories. This pattern is apparent across both experiments and runs counter to what was expected based on previous literature (Gabbert et al., 2009, 2012), specifically that an initial recall would strengthen encoded event details that could be retrieved in delayed recall attempts. The reason for this unexpected pattern is unclear. However, one possible explanation is that the Initial Recall provided a form of 'cognitive offloading' (Risko & Gilbert, 2016), which refers to the act of reducing memory and processing load by storing information through a physical action such as

writing it down. This may result in reduced recall accuracy (Lu et al., 2020) and vulnerability to misinformation (Risko et al., 2019). However, it has been shown that awareness of upcoming memory tests produces less cognitive offload and more accurate recall as it can be construed that an initial offloading of memory would not be beneficial for any subsequent recall task (Grinschgl et al., 2021). Participants in the present study were made aware prior to the stimulus video that they would be asked questions about the event at a later date; thus, this should have negated the effects of cognitive offloading. Given the potential impact that cognitive offloading may have on the efficacy of immediate SAI on later recall accuracy, future research should consider examining cognitive offloading in this context more directly.

There are potential caveats to consider with the current study. One possible explanation for why the SAI and WFR did not inoculate against misinformation, is that the misinformation narrative was not sufficiently influential on participants' memories to begin with (Greene et al., 2022). As participants differ considerably from one another in what they find memorable or pay attention to, it is possible that performance was affected by how peripheral items were presented in the misinformation narrative. As memories for central details are more likely to be retained than those for peripheral details, participants could have been more susceptible to misinformation that concerned peripheral details within the misinformation narrative (Dalton & Daneman, 2006).

However, our manipulation check reported in the Supplementary Materials revealed a difference in the number of correct responses for accurate and inaccurate items included in the narrative (i.e., items which were 'seen' correctly twice were more likely to be accurately selected, and items 'seen' incorrectly twice were less likely to be accurately selected, compared to items seen only once). This suggests that the post-event narrative was successful in incorporating additional information into participants' memory and is therefore unlikely to explain why we did not detect differences in misinformation responses between the SAI, WFR, and no recall conditions.

An alternative explanation may be the novel use of MCQs to test for memory after the delay, as opposed to another free recall test. This approach was used to examine and compare recall of specific categories of information (i.e., Action, Object, Person, or Setting details) directly and systematically. Although the questions we proposed allowed us to evaluate the types of misinformation incorporated into subsequent recall, they perhaps were not sensitive enough to capture differences between conditions. Thus, future research using a similar approach should consider increasing the number of MCQ questions to increase the sensitivity of this task and ensure that items which have indeed been recalled in Initial Recall are captured.

Given that eyewitnesses are likely to be influenced by factors such as stress during real-life events (Krix et al., 2016), it is possible that the stimulus video presented to participants did not produce enough arousal to encode into memory. However, in the recent meta-analysis on the SAI (Horry et al., 2021) a small effect size for event modality (e.g., live vs. video) on recall accuracy was found. Therefore, we do not believe this poses a threat to the validity of our results. Perhaps future research should seek to employ our methodology with a more immersive experience to see whether this impacts responses given in the SAI.

Finally, participants in this study were compensated with course credit, but a potential limiting factor of this study is that we were unable to fully establish their motivation to provide a complete and accurate account. In addition, given the online nature of the study, we were unable to control for any distractions that are particularly prevalent on computer and mobile devices, and which could have impacted the initial encoding and subsequent retrieval processes (Gabbert et al., 2022). To potentially mitigate these limitations, we did include two attention-checking questions and data from participants who did not respond correctly to these questions were removed. Nonetheless, future research may consider including an assessment of motivation.

In conclusion, the current findings demonstrate that witnesses would benefit from completing an SAI either immediately or as soon as possible following a witnessed event to capture the memory of the event. This also has practical implications in real-world situations as an immediate SAI would allow the Police to be provided with an initial accurate account which can begin to be investigated whilst a follow-up interview is arranged. The current research also highlighted the effectiveness of an online SAI. Specifically, it allowed participants to have greater control over the pace of the interview, in comparison to face-to-face interviews, with no time constraints in responding to questions. Additionally, the online format was more advantageous in terms of cost-effectiveness, reduced environmental impact, and enhanced accessibility. Future research could consider enriching the information collected from an online SAI by including multimedia integration, such as image and video responses.

Although there are practical benefits of the SAI when used immediately, it is important to also consider that it may be limited in its ability to prevent decay of memory and inoculate against the misinformation effect. However, further work is needed to examine in more depth the format of the second recall task, and whether there are situations when the SAI may produce a benefit following delay. For example, whether such differences may emerge in participant groups who may be more susceptible to memory decline (e.g., older population) or more vulnerable to misinformation effect (e.g., younger population and those with learning difficulties).

CONFLICT OF INTEREST STATEMENT

We have no conflicts of interest to disclose.

DATA AVAILABILITY STATEMENT

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

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ENDNOTE

[1] Huynh-Feldt correction used for non-sphericity.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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