Capturing best evidence from witnesses to serious road traffic collisions: A field trial of the Self-Administered Interview for Road Traffic Collisions

Final report for the Road Safety Trust

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Executive summary

This report summarises the results of a field trial evaluating the efficacy of a new investigative tool designed to secure comprehensive, high-quality accounts from witnesses to road traffic collisions: The Self-Administered Interview for Road Traffic Collisions (SAI-RTC). The SAI-RTC supports retrieval through clear and detailed instructions, the incorporation of mnemonic cues including mental reinstatement of context, and the use of open-ended prompts, and is firmly grounded in the science of investigative interviewing.

From June 2019 to February 2021, roads policing officers within South Wales Police were allocated to the control or SAI-RTC arms of the trial. Officers in the control arm of the trial continued to use standard operating procedures, which was to take a brief verbal account at the scene, and request that a standard reporting form be sent to key witnesses for subsequent completion. The remaining officers were trained to use the SAI-RTC. These officers were encouraged to administer the SAI-RTC at the scene of the collision, or to hand the SAI-RTC to witnesses for them to complete at home; where this was not practical, the officers were able to request that an SAI-RTC was posted to witnesses for subsequent completion.

Over the trial period, 218 eligible control forms and 58 eligible SAI-RTCs were received and coded, which came from 165 different collisions. Approximately 61% of the SAI-RTC cases and 51% of the control cases were referred to court for prosecution; these percentages were not statistically different between the two groups.

However, witnesses reported significantly more detail when completing the SAI-RTC than when completing the control form. On average, 160 details were included in SAI-RTC statements, compared to 102 details in control statements, an increase of approximately 57%. Across almost all categories of details that were coded (e.g., Person details, Action details, Vehicle details), SAI-RTC reports were more detailed than control reports. The increase in detail ranged from 41% to 84% across categories. Witnesses were also more likely to include information such as whether they had discussed the collision with anyone else, and details such as the weather conditions, road conditions, and visibility.

These findings suggest that the SAI-RTC is a useful tool for investigating road traffic collisions, especially when resources do not allow for timely in-person interviews with key witnesses. However, its efficacy would likely be further improved through developments that increase the return rate and decrease the delay between the collision and the retrieval attempt. Digital administration is a promising candidate for achieving both of these goals.

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1. Introduction

1.1. The importance of witness evidence in road safety

In 2019-2020, 131,220 people were injured on Britain's roads, a figure which included 22,890 serious injuries and 1,580 fatalities (Department for Transport, 2021). In the same year, 825 individuals were prosecuted for causing death by dangerous, careless, or inconsiderate driving, and a further 741 individuals were prosecuted for causing serious injury due to dangerous driving (Ministry of Justice, 2020). Road fatalities fell by around 45% from 2005 to 2011, then remained relatively stable between 2011 and 2019. 2020 saw a 20% drop in road fatalities, and a 40% drop in causalities of all severities, an anomaly which can likely be attributed to a marked reduction in traffic volumes over the same period due to coronavirus restrictions. Consequently, as coronavirus restrictions end, road casualties are expected to return to pre-2020 levels (Department for Transport, 2021).

Evidence from witnesses is often critical to the successful prosecution of dangerous drivers following a road traffic collision. Detailed and accurate testimony can be used to establish the sequence of events that led to the collision, who was at fault, and whether that driver was being reckless. Memory for a witnessed event decays over time, with a steep decline in memory quality in the hours and days following the incident, which then levels off as further time passes (Wixted & Ebbesen,1991). Furthermore, memories are vulnerable to distortion through exposure to misinformation which may come from other witnesses, media reports, social media, or even communication with police officers. As more time passes, the vulnerability of memory to misinformation increases, and witnesses find it increasingly difficult to distinguish between details that were personally experienced and details that were learned from another source (Horry et al., 2014; Paz-Alonso & Goodman, 2008). Thus, it is imperative that witnesses report their memories as soon as possible following a witnessed event, thereby minimising the potential for forgetting and distortion.

However, frontline roads policing officers typically lack the resources to secure comprehensive accounts from witnesses in a timely manner. For example, frontline officers must ensure that the scene is safe and secure, manage the flow of traffic, liaise with emergency services and recovery vehicles, and more. These competing duties leave little time for taking detailed accounts of what happened. Indeed, standard operating procedure within roads policing is to take contact details and a brief verbal account from witnesses, which is then followed up in a pen-and-paper form which is dispatched at a later date.

This procedure suffers from two major drawbacks. First, there is often a substantial delay (days, weeks, or even months) between the collision and the witness receiving the form on which they complete their account. Second, the form, which is described in more detail in the Methodology section, has not been designed to support memory retrieval and to elicit high-quality accounts. That is, it does not incorporate evidence-based methods of supporting witnesses to report their memories of the collision with high levels of detail and accuracy. In combination, these two drawbacks create the opportunity for significant information loss which, in

turn, may reduce the likelihood of securing a prosecution against a dangerous driver. Thus, the overarching goal of this project was to evaluate an evidence-based tool designed to elicit comprehensive and detailed initial accounts from witnesses to road traffic collisions.

1.2. The Self-Administered Interview©

The challenges associated with securing high-quality accounts from witnesses in a timely manner are not unique to roads policing. Indeed, there are many operational contexts in which resource constraints lead to substantial delays before witnesses can be formally interviewed. Consider, for example, a major incident such as a terror attack, which occurs in front of dozens, or even hundreds of witnesses. Competing demands on frontline officers' resources limit the ability to take high-quality contemporaneous accounts, leaving memory vulnerable to decay and distortion in the period before a formal interview can be arranged.

To address these logistical challenges, Gabbert et al. (2009) developed the Self-Administered Interview© (SAI©). The SAI©, which is a pen-and-paper booklet, is based upon the same principles that underpin the Cognitive Interview, which has long been considered the gold standard for interviewing witnesses (Fisher & Geiselman, 1992; Memon et al., 2010). These principles include providing retrieval support, allowing witnesses to control the flow of information via a free report, and following that free report up with open-ended, focused prompts. The key difference between the SAI© and the Cognitive Interview is that the SAI© is intended to be completed by a witness on their own, without the need for a trained interviewer to be present. As such, it has the potential to be a cost-effective method of capturing detailed accounts from witnesses in the aftermath of a witnessed event.

The SAI© was created to be very general, allowing it to be used for many types of incidents. It included five sections, designed to be completed in sequence. Section 1 provided the witness with an overview of the SAI© and how it would work. Section 2 provided witnesses with comprehensive instructions to visualise the scene and to report everything that they could remember; following these instructions, participants were provided with the space to write a narrative account of the event. Section 3 prompted witnesses to provide detailed person descriptions about the perpetrators involved in the event. Section 4 prompted witnesses to sketch the scene with the goal of preserving spatial details that are difficult to capture verbally. Finally, Section 5 prompted witnesses about specific details that they may not have thought to include elsewhere, such as the viewing conditions, weather conditions, and so on.

To date, more than a dozen studies have been conducted to test the efficacy of the SAI© under tightly controlled laboratory conditions. A recent meta-analytic review of these studies (Horry et al., 2021) found that initial accounts captured via the SAI© were much more detailed than initial accounts captured via less structured reporting forms. Though there was a small increase in the amount of incorrect details reported using the SAI©, the accounts remained highly accurate overall. That is, despite a slightly increased error rate, the proportion of details reported that were correct was around 90%.

Horry et al (2021) also examined the quantity and accuracy of information reported in a subsequent retrieval attempt. Participants who completed an initial SAI© produced subsequent accounts that were more detailed and more accurate than participants who did not complete an initial SAI©. These findings indicate that engaging in a high-quality, comprehensive initial retrieval attempt has a protective effect on memory, which is beneficial if witnesses need to be formally interviewed at a later date.

Though this research is promising, it all comes from laboratory studies in which participants watch video-taped staged events (which are usually chosen to be non-distressing for ethical reasons) and then complete an SAI© very shortly after witnessing the event (typically within a few minutes). This research paradigm is valuable in that it allows for tight control over extraneous variables, permitting claims about cause and effect. However, the experience of participants in these studies differs in many ways from the experience of a real witness, some of which may well alter the effectiveness of the SAI©. Real witnesses, for example, are more likely to experience shock and distress than laboratory participants; they are likely to experience longer delays between the witnessing the event and completing the SAI©, and they are likely to be more diverse than laboratory participants across a wide range of characteristics, including age, English proficiency, and literacy levels.

To date, no controlled field trials have been conducted to examine the efficacy of the SAI© in any operational context. Therefore, it is not known whether the benefits demonstrated in the laboratory will be apparent in the field. Despite the uncertainty in the evidence base, the College of Policing has recognised the potential of the SAI©, recommending its use in specific circumstances (when “witnesses are too numerous for officers/staff to interview them all”; College of Policing, 2020). Our goal was to further bolster the evidence base for the SAI© by conducting a controlled field trial in a specific operational context: the roads policing context.

Roads policing is a particularly promising context for the SAI© for several reasons. First, it is quite common for road traffic collisions to be witnessed by multiple people, especially if the collision occurs on a major road or in a busy urban centre. Second, frontline roads policing officers typically lack the resources to capture detailed reports from witnesses at the scene, as they have many duties to attend to (e.g., liaising with other emergency services and recovery vehicles, managing traffic, securing the scene, ensuring that the scene is as safe as possible). And finally, witness evidence is often critical in establishing what happened, and whether the incident occurred due to dangerous or reckless driving.

1.3. Aims of field trial

The overarching aim of this trial was to develop and evaluate a tool created for the specific purpose of securing detailed accounts of road traffic collisions from witnesses. This tool, the Self-Administered Interview for Road Traffic Collisions (hereafter the SAI-RTC) was co-created with experienced roads policing officers within South Wales Police. The SAI-RTC was compared to the standard reporting

form that is currently in use (hereafter the control form) to answer the following questions:

1) Do witnesses who complete the SAI-RTC produce more detailed accounts than witnesses who complete the control form?

2) Are there differences in the types of details that are reported by witnesses who complete the SAI-RTC compared to witnesses who complete the control form?

3) Do case disposal outcomes differ between cases that implement the SAI-RTC and cases that implement the control form?

2. Methodology

2.1. Participants and design

2.1.1. Randomisation of officers to conditions

SWP's Roads Policing Unit is divided into two geographical regions (Eastern and Western). Both regions include at least one large city, several large towns, and rural areas. Within each region, officers are divided into four teams.

Two teams within each region were randomly assigned to the SAI-RTC arm of the trial. Dr Horry led training sessions with these teams in June 2019. Officers provided informed consent for participation in the trial during this training session.

The remaining teams were allocated to the control arm of the trial, and they continued to follow standard procedures for obtaining witness accounts of road traffic collisions.

2.1.2. Witness eligibility criteria

To be eligible for inclusion in the trial, the witness had to be at least 18 years of age and in a fit state to provide a written account of the incident. In addition, witness statements were only shared with the research team if the witness provided their permission for their statement to be shared with third parties.

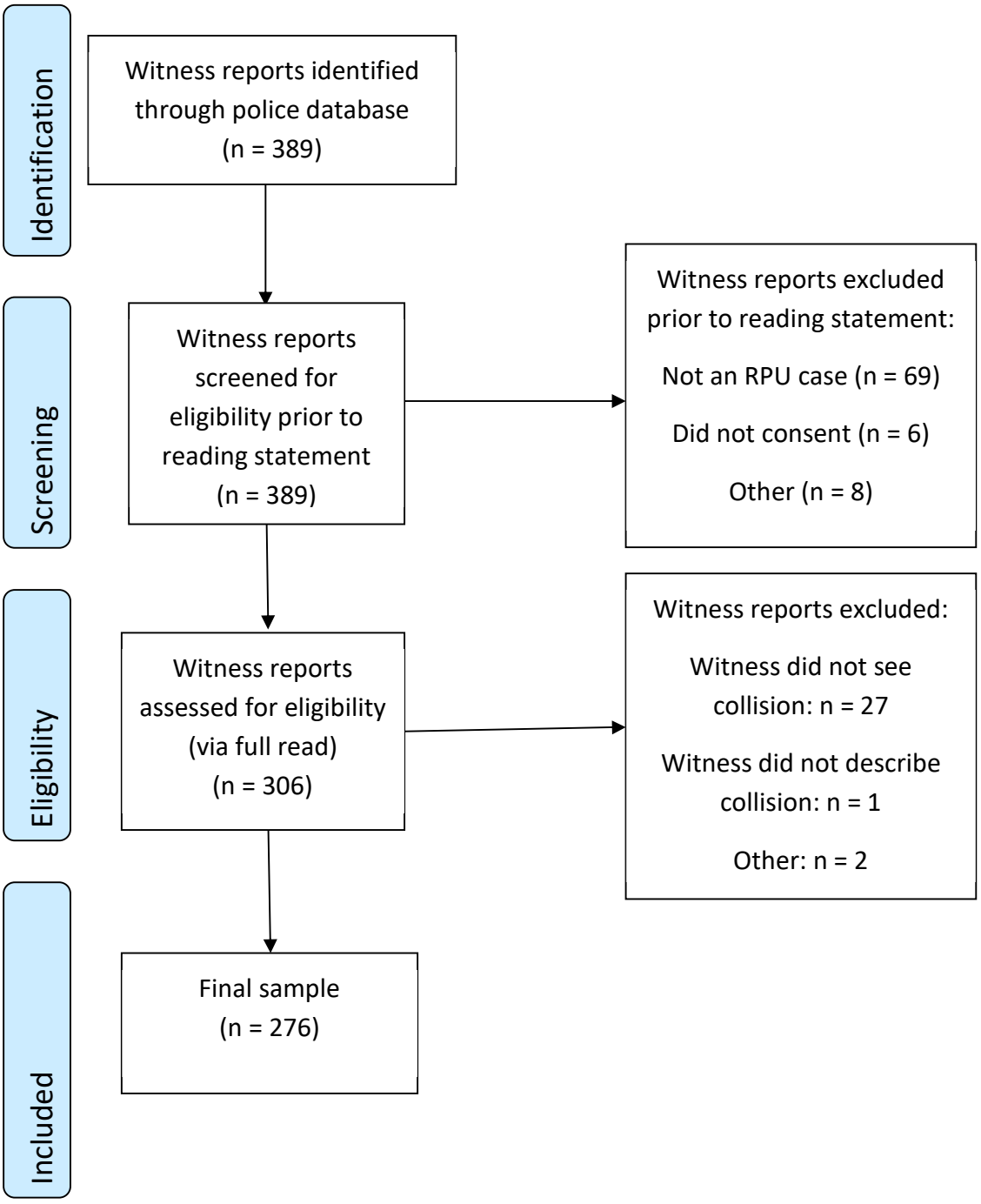
Cases were excluded if: i) they had not been investigated by the Roads Policing Unit (i.e., they had been attended by a Basic Command Unit); ii) the witness reported not having witnessed the incident or its immediate aftermath; iii) the witness did not provide any kind of narrative report of the event; iv) the witness did not consent to sharing their statement with third parties.

2.1.3. Final sample of statements

In total, 389 statements were received during the trial period. 113 statements were excluded because they were not eligible (see Figure 1). After exclusions, the final sample included 276 statements, of which 58 were SAI-RTCs and 218 were control forms. Detailed exclusion justifications for each statement can be found in Appendix 1.

The final sample of statements came from 165 different cases. The number of statements per case ranged from 1 to 7. Just over half (53.33%) of cases were associated with a single witness statement.

Figure 1. Flowchart detailing statement exclusions



2.2. Materials

2.2.1. Co-creation of the SAI-RTC

The SAI-RTC was adapted from the original Self-Administered Interview© (Gabbert et al., 2009), in partnership with Roads Policing officers from South Wales Police (SWP). Frontline Roads Policing Unit officers were invited to attend a co-creation meeting, held in May 2018, in which Dr Horry introduced the attendees to the SAI©, and invited them to suggest how the SAI© could be tailored for the road collision investigation context.

Following this meeting, the SAI© was adapted and circulated by email to the attending officers. Feedback was invited, and further refinements were made in response to that feedback. The finalised form was reviewed by the Crown Prosecution Service to ensure that any evidence obtained would meet standards needed for evidential use.

Finally, a Welsh language version of the SAI-RTC was created by the translation team within SWP to comply with Welsh language legislation.

2.2.2. Description of the SAI-RTC

The SAI-RTC consisted of seven sections to be completed by the witness:

- **Section 1** provided space for witnesses to write a narrative of the collision. Before starting to write, instructions encouraged witnesses to take some time to picture the event, including their thoughts, feelings, and what they could see and hear. These instructions were included because mental reinstatement of context has been shown to be a powerful technique for improving memory recall (Fisher & Geiselman, 1992; Dando et al., 2009). The instructions also encouraged witnesses to report everything that they could remember, but to avoid guessing (cf. Fisher & Geiselman, 1992). Finally, the instructions cautioned witnesses to report only information from their own memories, and to avoid reporting information that they had learned from another source.

-**Section 2** encouraged witnesses to sketch the scene to preserve spatial information (e.g., positions and direction of travel of vehicles; road layout). Witnesses were reassured that this was not a test of their drawing ability, but would only be used to help officers understand what had happened.

-**Section 3** prompted witnesses to describe each vehicle involved in the accident in as much detail as they could recall. In particular, they were encouraged to report any details that they hadn't previously mentioned in their narrative. Again, witnesses were cautioned not to guess about any details that they were unsure of.

-**Section 4** prompted witnesses to describe the people involved in the incident, and their behaviour before, during, and after the collision.

-**Section 5** included a series of prompts encouraging witnesses to report any additional information about the volume of traffic, road conditions, weather conditions, and visibility.

-**Section 6** asked witnesses about their vision, including whether they were wearing any prescribed corrective eyewear at the time of the collision.

-**Section 7** asked witnesses to describe who they were with at the time of the collision, and who they had discussed the collision with. They were informed that this information would be used to help officers to determine who at the scene saw and heard each aspect of the incident.

2.2.3. Description of the control form
The control form includes five sections:

-**Section 1** asks the witness to describe their own vehicle (if applicable). If the witness was not in a vehicle, they are asked to state where they were at the time of the collision

-**Section 2** asks the witness to describe any injuries that they sustained in the collision

-**Section 3** asks the witness to describe any damage that was sustained to their vehicle or property

-**Section 4** asks the witness whether the offending driver stopped. The witness is also prompted to describe the offending vehicle (including registration, if known), the offender driver, and any damage that was sustained to the offending vehicle. The witness is also asked whether the driver would have known that there had been a collision

-**Section 5** asks the witness to provide a statement of what happened. They are prompted to include details including weather, road conditions, visibility, and traffic conditions. They are also asked to describe vehicles, to estimate speeds of vehicles, and to describe damage and injuries sustained.

2.2.4. Coding scheme
Each statement was coded using a comprehensive coding scheme, which was developed specifically for this project. The number of unique details belonging to each of the categories shown in Table 1 was reported.

Table 1. Detail categories coded in witness statements

Category	Definition	Exemplars
Action	Descriptions of actions	I was **driving**; he was **shouting**
Person	Person descriptors and identifiers	My **girlfriend;** the **man** was **tall**
Object	Any non-vehicle object	**Tree; sign; traffic lights**
Vehicle	Vehicle identifiers and descriptors	The **car** was a **Mercedes**; a **motorbike**
Speed	Descriptions and estimates of speed of vehicles	He was going **fast**; about **30 miles an hour**; the van was **speeding**
Surroundings	Information about weather, road, and traffic conditions	It was **light**; **Visibility was poor**; The road was **clear**
Spatial	Details that place vehicles, people, or objects in specific places	I was in the **left lane**; the car **moved over**; at the **top of the hill**
Temporal	Details that indicate when a particular action occurred	**then** the car swerved; **after** he overtook; **at 12pm**
Incident Critical Details	Details that indicate criminal, negligent, or reckless behaviour; or which indicate careful and diligent behaviour	The man was **drunk;** the **driver failed to give way**; she was **driving while talking on her phone**; I **checked my mirrors** before moving over
Mental operations	Details pertaining to a thought process	I **realised** that he wasn't going to stop; I **thought** the other car was going to turn right
Irrelevant details	Details not directly relevant to understanding what happened	**I had just been to buy milk**; I was **on my way to work**
Hedges	Indications of uncertainty	**I guess** he was going about 40 miles an hour**; I think** someone shouted for help

In addition, we recorded occurrences of each of the following types of information within each statement (see Table 2).

Table 2. Occurrences recorded within each statement

Category	Definition	Exemplars
Damage	Damage sustained to vehicles or objects	**My rear side passenger door was damaged**; **the fence was damaged**
Injury	Injuries sustained by people involved in the incident	**I broke my left leg**; **I sustained whiplash;** the man's **head was bleeding**
Witness Impact	Ongoing impact on the witness (physical, emotional, or other)	**I have had trouble sleeping since the incident; I can no longer drive; I am in constant pain since the accident**
Photographic evidence	Mention of having photographs of the vehicles/scene	**I can provide photos I took after the collision**
Video evidence	Mention of CCTV/dashcam/video footage	I **recorded the incident on my mobile phone**; I have **dashcam footage**

The presence/absence of information pertaining to the following categories of information within each statement was also recorded (see Table 3).

Table 3. Categories of information that were coded as being either present or absent in each statement

Category	Definition
Sketch	A sketch of the scene
Discussion During Incident	Indication of whether the incident was discussed with anyone else at the scene
Discussion After Incident	Indication of whether the incident was discussed at a later date (but before completion of statement)
Vision	Any mention of the witness's vision, including whether corrective eyewear was/was not being worn
Weather	Any mention of weather conditions
Visibility	Any mention of visibility conditions (e.g., whether it was light or dark)

Full details of the coding scheme, along with coded exemplars (not real statements) can be found on the OSF page: https://osf.io/z5q7f/files/.

2.2.5. Inter-rater reliability

All statements were coded by a single coder. To ensure that the coding scheme was being applied consistently, a second coder undertook extensive training in the application of the coding scheme. The second coder independently coded 60 statements (approximately 22% of the total sample) in randomly selected batches of 10. Discrepancies were discussed between the two coders until agreement was reached.

For each of the detail types listed in Table 1, inter-rater reliability was assessed by calculating a correlation coefficient between the two raters' scores for each statement. As can be seen in Table 4, inter-rater reliability was high across most categories. For categories with lower inter-rater reliability (e.g., Incident Critical Details), the coding scheme was revised to clarify coding rules.

Table 4. Inter-rater reliability for each detail category

Detail type	Correlation
Action	.98
Person	.99
Object	.93
Vehicle	.96
Speed	.87
Surroundings	.95
Spatial	.99
Temporal	.97
Incident Critical Details	.73
Mental operations	.85
Irrelevant details	.89
Hedges	.87

2.2.6. Officer feedback survey

After the completion of the trial, officers from the SAI-RTC arm of the trial were invited to complete an online survey through the software platform Qualtrics. Participants were instructed to answer as candidly as possible to each of the questions.

The first question in the survey asked officers in how many cases they had used the SAI-RTC, with the following response options: 0, 1-3, 4-6, 7-9, 10+.

The subsequent three questions asked participants about how frequently witnesses: 1) completed the SAI-RTC at the scene; 2) took the SAI-RTC away from the scene to complete later; 3) were posted the SAI-RTC to complete later. For each of these three questions, officers had the response options Always, Often, Sometimes, Rarely, or Never. If applicable, questions 2) and 3) were followed up with space for officers to describe the factors that influenced their decision to administer the SAI-RTC in that way in those cases.

The following set of questions asked officers to compare their experiences of the SAI-RTC with their typical experiences when using the control form. They were asked about 4) the level of detail provided by witnesses; 5) the usefulness of the statements for the investigation; 6) the ease of finding the relevant information; 7) the need for follow-up interviews with witnesses; and 8) the pace of the investigation. For each of these questions, participants had three response options – the SAI compared favourably to the control form (e.g., "More detailed than [the control form]"); the SAI was similar to the control form (e.g., "As detailed as [the control form]"); or the SAI compared unfavourably to the control form (e.g., "Less detailed

than [the control form]"). Following each question, participants were provided with space to provide any extra detail about their response, if they wished.

The next set of questions allowed officers to enter open-ended responses: 9) Would you like to provide any information about any cases where the SAI-RTC was particularly helpful? 10) Were there any barriers to implementing the SAI-RTC? 10) What did you like most about the SAI-RTC? 11) What did you like least about the SAI-RTC? 12) How could the SAI-RTC be improved to assist investigations?

The next set of questions focused on the possible translation of the SAI-RTC into a digital form. They were first asked whether they thought an online/digital version of the SAI-RTC would be useful (Definitely yes, Probably yes, Might or might not, Probably not, Definitely not); the next question asked whether they would be more likely to implement a digital version of the SAI-RTC at the scene than the paper version of the SAI-RTC (More likely, As likely, Less likely).

Finally, participants were asked whether, given the choice, they would continue to use the SAI-RTC, or whether they would continue to use the control form. They were also provided with space to explain their preference, if they wished to.

2.2.7. Witness feedback survey

To capture witness feedback on their experience of completing the SAI-RTC, a brief user experience survey was appended to the back of the form. This survey included six questions. Question 1 asked "Overall, how easy did you find completing the Self-Administered Interview?" (Very easy, Quite easy, Quite difficult, Very difficult). Question 2 asked "Do you feel that the Self-Administered Interview helped you to remember the incident in more detail?" (Yes, definitely; Yes, probably; No, probably not; No, definitely not). The remaining four questions were open-ended. Witnesses were asked what they liked best about the SAI-RTC, what they liked least about the SAI-RTC, what they would like to see changed about the SAI-RTC, and any other suggestions for improvement.

2.3. Protocol

The trial was conducted between 20th June 2019 and 28th February 2021. Officers in the control arm of the trial continued to follow standard operating procedures for all cases that they attended. This involved taking a brief verbal account of the incident at the scene, and taking contact details from key witnesses. The officers would then later request that the standard reporting form used for collision investigation (the control form) be posted to the witness. The witness would then complete the form and return it by post to the Motoring Unit within SWP, where it would be scanned and uploaded for review by the investigating officer.

Officers in the SAI-RTC arm of the trial were encouraged to take a brief verbal account from key witnesses at the scene, and to then request that key witnesses complete the SAI-RTC at the scene. Where this was not possible (e.g., the witness was not in a fit state to complete the SAI-RTC, or the weather or road conditions made completion of the SAI-RTC at the scene impractical), officers were requested to hand the witness a copy of the SAI-RTC, along with a pre-paid envelope, to complete at home. Where this was not practical, the officers could request that the

SAI-RTC was posted to the witness later. Completed forms were then sent to the Motoring Unit, where they were scanned and uploaded for review by the investigating officer.

All witness statements were processed by SWP according to their standard operating procedures. If the witness provided permission for their statement to be shared, an administrative assistant within the Motoring Unit would then redact any potentially identifying information from the statement (e.g., names, addresses, date of birth, vehicle registration numbers). The redacted statements were shared with the research team in small batches via a secure email server (Proton Mail), each of which was encrypted and password protected. The encrypted statements were stored on a password protected computer.

2.8. Measures

For each case, SWP provided the following information to the research team: Injuries sustained (Non-injury; Minor injury; Serious injury); the number of statements that were requested; the number of statements that were returned; and the case disposal outcome (No Further Action; Warning; Driver Awareness Course; Court). Information was also requested on whether additional follow-up interviews were conducted with the witness, but this information was only available in approximately 55% of cases, and so it was not analysed due to its questionable reliability.

For each individual statement, the following information was recorded (where available): the delay between the incident and the completion of the statement (in days); the role of the witness (directly involved vs bystander); the weather conditions at the time of the incident; traffic conditions at the time of the incident; time of day that the incident occurred; gender of the witness; loss of consciousness; discussion of the incident at the scene; discussion of the incident at a later date, but prior to completion of statement.

2.9. Ethical approvals

Ethical approval for the trial was obtained from the Swansea University Department of Psychology Ethics Committee (approval received on 8th August 2018; reference number 0247). Ethical approval for the officer feedback survey was obtained from the Swansea University Department of Psychology Ethics committee (approval received on 22nd February 2021; reference number 5117).

3. Results

3.1. Return rates

The distribution of SAI-RTCs and control forms was imbalanced in our final sample, with approximately 21% of statements being SAI-RTCs. To rule out the possibility that witnesses were less likely to return the SAI-RTC than the control form, data was obtained on the number of statements that were requested during the trial period. In total, 102 statements were requested via the SAI-RTC and 420 statements were requested via the control form. Thus, a much higher number of control forms than SAI-RTCs were requested from witnesses during the trial.

Next, we statistically compared the proportion of SAI-RTCs that were returned (61.77%) with the proportion of control forms that were returned (56.19%) using a

Chi-square test of Association. The difference between these two proportions was not statistically significant, χ^2 (1, N = 522) = 1.04, p = .31, Cramer's V = .05. Thus, we observed no evidence that witnesses were less likely to return the SAI-RTC than the control form. Rather, the imbalance in our sample appears to have been driven by fewer SAI-RTCs being requested than control forms throughout the trial. Notably, however, a substantial minority of witnesses in both arms of the trial did not return a statement, which indicates that there is significant scope to reduce information loss within road traffic collision investigations.

3.2. Characteristics of cases

Table 5 summarises the characteristics of the SAI-RTC and control cases in the trial. To determine whether the samples differed in any potentially important ways, the SAI-RTC and control groups were compared on each characteristic.

Table 5. Characteristics of SAI-RTC cases and control form cases

	SAI-RTC	Control
Injury type		
Non-injury	25.86% (n = 15)	24.31% (n = 53)
Minor injury	48.28% (n = 28)	66.97% (n = 146)
Serious injury	25.86% (n = 15)	8.72% (n = 19)
Delay		
Median	10.5 days	17 days
Range	0 to 186 days	2 to 217 days
Interquartile range (IQR)	16 days	23 days
Witness role		
Directly involved	41.38% (n = 24)	57.34% (n = 125)
Not directly involved	58.62% (n = 34)	42.66% (n = 93)
Loss of consciousness		
No loss of consciousness	91.67%* (n = 22)	89.60%* (n = 112)
Loss of consciousness	8.33%* (n = 2)	10.40%* (n = 13)

Note: *Percentage of cases in which the witness was directly involved in the collision

As can be seen in Table 5, the SAI-RTC sample included a lower proportion of minor injury cases, and a higher proportion of serious injury cases than the control sample. This difference was confirmed in a Chi-square test of Association, which was statistically significant: χ^2 (2, N = 276) = 13.52, p < .001, Cramer's V = .22. Thus, while a similar proportion of SAI-RTC and control cases involved some kind of injury, the SAI-RTC cases tended to involve more serious injuries than the control cases.

When examining the delay between the incident and the completion of the statement, it was immediately evident that the distributions were highly skewed. That is, most cases involved relatively short delays, but there was a small number of cases with substantially longer delays. We therefore present the median delay in each condition in Table 5. We compared the distribution of delays between the two conditions using the Mann-Whitney U test, as this test does not assume that the data are normally distributed. This test indicated that the SAI-RTC cases were associated with shorter delays, on average, than the control cases, U = 7450.00, N = 276, p = .037, r = .18.

Notably, however, only a small minority of SAI-RTCs (~14%) were completed on the day of the incident, suggesting that the SAI-RTC wasn't being used to its full potential. When these same-day cases were removed, the difference in delay between conditions was no longer statistically significant, U = 5706.00, N = 268, p = .61, r = .05, which suggests that the difference in average delay was driven predominantly by this small group of cases in which the SAI-RTC was administered on the day of the incident.

The witness's role within the incident was coded as either being directly involved (the witness was in a vehicle that was involved in the collision, or was struck by a vehicle) or not directly involved (the witness was neither in an involved vehicle nor struck by a vehicle). Across the whole sample, approximately 54% of statements were from witnesses who were directly involved in the collision. To compare the proportion of directly involved witnesses between the SAI-RTC and control conditions, we conducted a Chi square test of association. This test was statistically significant, χ^2 (1, N = 276) = 4.70, p = .03, Cramer's V = .13. As shown in Table 5, a higher proportion of statements in the control condition were from directly involved witnesses than in the SAI-RTC condition.

Information concerning any loss of consciousness was extracted from the information provided by witnesses. This was coded conservatively, such that a loss of consciousness was only recorded if it could clearly and unambiguously be determined based on the information provided (e.g., "I woke up later"). Only a small number of statements (n = 15) were from witnesses who had definitively lost consciousness at some point during the event. We compared the proportion of *directly involved witnesses* who did *vs* did not lose consciousness between the SAI-RTC and control conditions using a Chi-square test of association. This test was not statistically significant, χ^2 (1, N = 134) = 0.10, p = .76, Cramer's V = .03.

In summary, SAI-RTC and control cases differed in a few important ways. SAI-RTC statements were more likely to be from cases that resulted in serious injury, were less likely to come from directly involved witnesses, and tended to involve shorter average delays than control statements.

3.3. Case outcomes

At the time of writing, four cases had not yet had their outcomes finalised. Of the remaining 161 cases in our sample, 85 (52.80%) were prosecuted in court, 42 (26.09%) ended in action short of a court prosecution (either a warning or a Driver Awareness Course)[1], and the remaining 34 (21.12%) ended with no action being taken against any driver. Table 6 shows the percentage of cases that ended in each outcome, split by condition.

[1] Within the "Action short of Court" category, three cases (2 Control and 1 SAI-RTC case) ended in a written caution, three cases (all Control cases) ended in a verbal warning, and 36 ended in a Driver Awareness Course. Re-categorising the verbal warning cases as "No further action" did not change the statistical significance of the findings, nor the conclusions that could be drawn

Table 6. Case outcomes in the SAI-RTC and control arms of the final (finalised cases only)

	SAI-RTC (n = 31)	Control (n = 130)
Court	61.29% (n = 19)	50.77% (n = 66)
Action short of court	16.13% (n = 5)	28.46% (n = 37)
No further action	22.58% (n = 7)	20.77% (n = 27)

To compare these outcomes statistically, we conducted a series of logistic regressions. In each regression model, we included Injury (Injury vs Non-Injury) and the Number of Statements Returned as covariates. Condition (Control vs SAI-RTC) was entered as the predictor variable. The first model predicted Court outcomes (Court vs Other outcome), the second model predicted Action Short of Court outcomes (Action Short of Court vs Other outcome), and the third model predicted No Further Action outcomes (No Further Actions vs Other outcome). To control for familywise error, we applied a Bonferroni-corrected alpha level of .017 (.05/3) to each of these tests.

Table 7. Regression models predicting case outcomes from Condition

Parameter	Coefficient [with 95% CI]	Statistical significance
Model 1: Predicting Court outcomes		
Intercept	-0.43 [-1.19, 0.33]	z = -1.12, p = .26
Injury (Injury vs Non-Injury)	-0.02 [-0.73, 0.69]	z = -0.06, p = .95
Number of Statements Returned	0.27 [-0.03, 0.58]	z = 1.75, p = .08
Condition (SAI-RTC vs Control)	**0.38 [-0.43, 1.19]**	***z* = 0.38, *p*= .36**
Model 2: Predicting Action Short of Court		
Intercept	-0.73 [-1.65, 0.19]	z = -1.55, p = .12
Injury (Injury vs Non-Injury)	0.65 [-0.21, 1.51]	z = 1.48, p = .14
Number of Statements Returned	-0.39 [-0.79, 0.01]	z = -1.93, p = .054
Condition (SAI-RTC vs Control)	**-0.75 [-1.81, 0.30]**	***z* = -1.41, *p*= .16**
Model 3: Predicting No Further Action		
Intercept	-0.89 [-1.74, -0.03]	z = -2.04, p = .04
Injury (Injury vs Non-Injury)	-0.61 [-1.42, 0.20]	z = -1.47, p = .14
Number of Statements Returned	-0.03 [-0.38, 0.33]	z = -0.14, p = .89
Condition (SAI-RTC vs Control)	**0.16 [-0.80, 1.12]**	***z* = 0.49, *p*= .74**

Note: The main effect of Condition, after adjusting for Injury and Number of Statements Returned, is shown in bold.

Table 7 shows summaries of the regression models for each outcome. Condition was not a statistically significant predictor of any outcome. In other words, we did not observe any evidence here that the SAI-RTC is associated with a change in the probability of any of the three outcomes we were able to code.

3.4. Total details included in witness statements

Previous research in laboratory contexts has consistently found that witnesses produce more detailed reports when completing an SAI than when completing other types of memory reports that provide less retrieval support (Horry et al., 2021). This

prior research formed the basis for the pre-registered hypothesis that witnesses in the SAI-RTC condition would report a higher number of details than witnesses in the control condition (see https://osf.io/z5q7f/ for pre-registration, anonymised data, and analysis code).

The data were analysed using a mixed effects regression model, in which the total number of details reported was predicted from Condition (SAI-RTC vs control). Three covariates were included in the model: Injury (Injury vs Non-Injury), Delay (number of days between incident and statement), and Witness Role (Involved vs Non-Involved). As statements from the same case would likely be more similar to one another than statements from different cases, the regression model included random intercepts for Case ID. The regression model was built in three stages: The first model included only the random intercept for Case ID. The second model included the three covariates. The third model included Condition. The critical hypothesis test was the significance test associated with the coefficient for the fixed effect of Condition. Because the hypothesis was directional, a one-sided test (SAI-RTC > Control) was used. The alpha level for this test was .05, one-sided. These analyses were conducted using the lme4 (Bates et al., 2015) and lmerTest (Kuznetsova et al., 2017) packages for R (version 3.6.0; R core team, 2019). The regression model is summarised in Table 8.

The mean number of details reported by witnesses in the SAI-RTC condition was 159.69 (*SD* = 77.80); in the control condition, the mean number of details reported was 101.68 (*SD* = 51.14). The regression model including the fixed effect for Condition significantly improved the fit of the model to the data when compared to the covariates-only model, χ^2 (1, *N* = 276) = 24.94, *p* < .001. Furthermore, the regression coefficient for Condition was positive and statistically greater than zero (see Table 8). The hypothesis was, therefore, supported. On average, participants reported approximately 51 additional details when completing the SAI-RTC than when completing the standard witness reporting form, which is an increase of around 50%.

Table 8. Regression model predicting Total Details Reported from Condition

Fixed effect	Coefficient [with 95% CI]	Statistical significance
Intercept	112.90, [95.64, 130.16]	
Injury (Injury vs Non-Injury)	-9.96, [-26.91, 6.99]	*t*(175.44) = -1.15, *p* = .25
Delay	-0.13, [-0.34, 0.09]	*t*(213.11) = -1.14, *p* = .26
Role (Non-involved vs Involved)	0.73, [-13.08, 14.54]	*t*(270.77) = 0.10, *p* = .92
Condition (SAI-RTC vs Control)	**51.02, [32.29, 69.74]**	***t*(140.14) = 5.34, *p* < .001**

Note: The coefficient for Condition is shown in bold

3.5. Detail types

The preceding analysis indicated that, overall, witnesses provided more detail when completing the SAI-RTC than when completing the control form. But how consistent is this increase across detail categories? Do witnesses tend to report more of all detail types when completing the SAI-RTC, or are these increases confined to particular types of detail? To answer these questions, we conducted a series of mixed effects regressions, each predicting a different type of detail (Person, Vehicle, Action, Object, Temporal, Speed, Surrounding, Spatial, and Incident Critical Details).

For each outcome variable, a regression model was first built that included three covariates: Injury, Delay, and Witness Role. A second model was then built which also included Condition as a predictor. The goodness-of-fit of the two models was statistically compared. All models included random intercepts for Case ID.

Inferential tests were applied to the Condition coefficient within each analysis. It was predicted that witnesses would provide more details of all types when completing the SAI-RTC than when completing the control form; consequently, one-sided tests were used. To control familywise error, a Bonferroni-corrected alpha of .006 (.05/9) was applied to each analysis (one-sided).

Table 9 shows the mean number of each detail type in the SAI-RTC and Control conditions, along with the regression coefficient and p value. The full regression models can be found in Appendix 2.

Table 9. Comparisons between the SAI-RTC and Control forms for each detail category

Detail type	SAI-RTC		Control		Coefficient and p value
	M	SD	M	SD	
Person	36.21	23.59	20.34	11.77	12.98, $p < .001$**
Vehicle	14.14	6.60	9.67	5.68	4.04, $p < .001$**
Action	31.21	19.03	19.56	11.38	9.42, $p < .001$**
Object	3.71	2.66	2.95	3.13	0.64, $p = .10$
Temporal	13.33	7.38	8.21	5.13	4.57, $p < .001$**
Speed	1.81	1.55	1.28	1.23	0.55, $p = .004$*
Surrounding	7.98	2.78	4.33	2.72	3.71, $p < .001$**
Spatial	24.57	17.24	16.79	9.27	3.77, $p < .001$**
Incident Critical Details	4.98	3.32	3.32	2.44	3.68, $p < .001$**

Note: * denotes $p < .006$; ** denotes $p < .001$

For eight of the nine detail categories, the hypothesis was supported. Specifically, witnesses who completed the SAI-RTC provided more details than witnesses who completed the control form. Across these eight detail categories, the percentage increase in information ranged from 41% (Speed details) to 84% (Surrounding details). The only detail category for which a statistically significant increase in detail in the SAI-RTC condition was not observed was Object details.

3.6. Incorporation of Irrelevant Details

So far, the analyses have indicated that witnesses produce significantly more detailed reports when completing the SAI-RTC than when completing the control form, and that this increase is seen across almost all detail types. If witnesses simply report more in a SAI-RTC, without considering the relevance of that information, then it is possible that the total number of Irrelevant details would also be increased. On the other hand, if witnesses selectively strive to report more useful details in a SAI-RTC, then the number of irrelevant details reported may be unaffected, or perhaps even decrease. Following the model building procedure reported above, the total number of irrelevant details reported was compared between the SAI-RTC and control conditions. Because we did not have a directional hypothesis, we used a two-sided test, with an alpha level of .05.

Irrelevant details were reported quite infrequently; the mean number of irrelevant details was just 0.37 (95% CI [0.20, 0.54]). As shown in Table 10, participants in the SAI-RTC condition reported, on average, 0.19 (95% CI [0.01, 0.38]) additional irrelevant details in their reports than participants in the control condition. These results suggest that participants were not more selective in their reporting when using an SAI-RTC. However, the total number of irrelevant details reported in the control condition was still very low.

Table 10. Regression model predicting Total Irrelevant Details Reported from Condition

Fixed effect	Coefficient [with 95% CI]	Statistical significance
Intercept	0.37, [0.20, 0.54]	
Injury (Injury vs Non-Injury)	-0.01, [-0.18, 0.15]	$t(153.9) = -0.17$, $p = .87$
Delay	0.001, [-0.001, 0.003]	$t(166.6) = 0.70$, $p = .49$
Role (Non-involved vs Involved)	-0.10, [-0.25, 0.04]	$t(264.0) = -1.43$, $p = .15$
Condition (SAI-RTC vs Control)	**0.19, [0.01, 0.38]**	***t*(104.6) = 2.05, *p* = .043**

Note: The coefficient for Condition is shown in bold

3.7. Descriptions of Mental Operations

Sometimes, witnesses may report their thoughts, intentions, and expectations. These were coded as Mental Operations. Using the same regression approach described previously, we compared the number of Mental Operations reported between the SAI-RTC and control conditions. As we did not have a directional prediction, we used a two-sided test with an alpha level of .05.

Table 11. Regression model predicting Total Mental Operations reported from Condition

Fixed effect	Coefficient [with 95% CI]	Statistical significance
Intercept	1.43, [0.94, 1.93]	
Injury (Injury vs Non-Injury)	-0.08, [-0.56, 0.41]	$t(184.0) = -0.31$, $p = .76$
Delay	-0.01, [-0.01, 0.00]	$t(215.2) = -1.71$, $p = .09$
Role (Non-involved vs Involved)	-0.18, [-0.58, 0.22]	$t(270.5) = -0.87$, $p = .38$
Condition (SAI-RTC vs Control)	**0.71, [0.17, 1.25]**	***t*(147.76) = 2.59, *p* = .01**

Note: The coefficient for Condition is shown in bold

On average, witnesses reported 1.43 (95% CI [0.94, 1.93]) Mental Operations. Witnesses in the SAI-RTC condition reported, on average, 0.71 (95% CI [0.17, 1.25]) additional Mental Operations, which was a statistically significant difference ($p = .01$). The regression model is shown in Table 11.

3.8. Descriptions of damage and witness impact

The following analyses focus on the number of instances in which witnesses described damage that was sustained to a vehicle or object, and lasting witness impact (psychological, emotional, or physical). These details were treated separately because they do not form part of the memorial representation of the event. Rather, they refer to information that was learned later (damage), or that became apparent over time (witness impact).

In two separate analyses, we compared the number of instances in which witnesses reported information about damage/witness impact between the SAI-RTC and control conditions. We had no clear predictions regarding direction of effect. On the one hand, the SAI-RTC was expected to produce more detailed narratives of the event itself, and this heightened level of detail may also spill over into details about damage and witness impact. However, the control form included specific prompts relating to damage and injury, whereas the SAI-RTC did not. Therefore, we might expect that such details would be reported more frequently in the control form than in the SAI-RTC. Because we did not have a directional hypothesis, we used a two-sided test. To control familywise error, we used a Bonferroni-corrected alpha level of .025 (.05/2).

The average number of instances in which witnesses mentioned damage was 1.35 (95% CI [1.12, 1.57]). As shown in Table 12, Condition was not a statistically significant predictor of damage reports ($p = .04$).

Table 12. Regression model predicting number of damage details between from Condition

Fixed effect	Coefficient [with 95% CI]	Statistical significance
Intercept	1.35, [1.12, 1.57]	
Injury (Injury vs Non-Injury)	-0.20, [-0.42, 0.01]	$t(163.3) = -1.83$, $p = .07$
Delay	<.01, [-0.003, 0.003]	$t(175.2) = 0.15$, $p = .88$
Role (Non-involved vs Involved)	-0.63, [-0.82, -0.45]	$t(163.9) = -6.67$, $p < .001$
Condition (SAI-RTC vs Control)	**-0.25, [-0.48, -0.01]**	***t*(115.0) = -2.04, *p* = .04**

Note: The coefficient for Condition is shown in bold

The average number of instances in which witnesses reported lasting witness impact was 1.32 (95% CI [0.75, 1.89]). As shown in Table 13, Condition was not a statistically significant predictor of witness impact reports ($p = .89$).

Table 13. Regression model predicting number of witness impact details between from Condition

Fixed effect	Coefficient [with 95% CI]	Statistical significance
Intercept	1.32 [0.75, 1.89]	
Injury (Injury vs Non-Injury)	0.03, [-0.56, 0.61]	$t(125.2) = 0.10$, $p = .92$
Delay	<-.01, [-0.007, 0.007]	$t(269.1) = -0.03$, $p = .98$
Role (Non-involved vs Involved)	-0.38, [-0.77, 0.006]	$t(213.9) = -1.93$, $p = .054$
Condition (SAI-RTC vs Control)	**-0.05, [-0.72, 0.62]**	***t*(113.6) = -0.14, *p* = .89**

Note: The coefficient for Condition is shown in bold

3.9. Presence or absence of specific information

Following the free report, the SAI-RTC includes a series of prompts which cue the witness to provide information about details that may otherwise not be reported. These include: Whether the witness discussed the incident with another person at the scene (Discussion – During), or after leaving the scene (Discussion – Post); their visual acuity, including corrective eyewear (Vision); the weather conditions (Weather); the traffic conditions at the time of the incident (Road Conditions); and whether it was light or dark at the time of the incident (Visibility). Witnesses who completed the SAI-RTC were also prompted to sketch the scene (Sketch).

We coded the presence or absence of each of these types of information in each report. We then built logistic regression models that predicted the presence or absence of the information from Condition. As in the previous analyses, Injury, Delay, and Role were included as covariates. We predicted that each of these types of information would be more likely to be reported in the SAI-RTC than in the control

form; we therefore applied a one-sided test. To control familywise error, we applied a Bonferroni-corrected alpha level of .008 (.05/7). Table 14 shows the percentage of control and SAI-RTC reports that included each type of information. Also shown is the model-derived odds ratio for the comparison between report types. Full regression models can be found in Appendix 3.

Table 14. The percentage of control and SAI-RTC reports that included specific types of information

Outcome	Control (%)	SAI-RTC (%)	Odds ratio (95% CI)
Discussion During	56.42%	77.59%	2.82 [1.46, 5.76]
Discussion Post	5.51%	27.59%	6.30 [2.78, 14.68]
Vision	1.38%	93.10%	7573.88 [606.71, 75771.34]
Weather	65.14%	94.83%	10.84 [3.79, 45.81]
Road Conditions	79.36%	96.55%	8.09 [2.36, 50.91]
Visibility	50.00%	77.59%	3.49 [1.82, 7.13]
Sketch	2.75%	93.10%	489.18 [146.07, 2187.95]

As is evident from Table 14, each type of detail was more likely to be included in SAI-RTC reports than in control reports. This difference was especially striking for Vision, which was almost never mentioned in the control form, but almost always mentioned in the SAI-RTC. Similarly, Sketches were rarely spontaneously produced in the control form, but almost always produced when prompted in the SAI-RTC. Even details that were prompted in the control form (Weather, Road Conditions, and Visibility) were more likely to be reported in the SAI-RTC, though the effect sizes were smaller.

3.10. Officer feedback

Seven officers completed the feedback survey. Six of these officers identified as male, and one identified as non-binary/third gender. One participant was aged between 31 and 40, while the remaining six participants were aged between 41 and 50. Years of policing experience ranged from 7 to 22 (Median = 20 years), and years of roads policing experience ranged from 3 to 14 (Median = 8 years). Three officers indicated that they had used the SAI-RTC in more than 10 cases; one indicated that they had used the SAI-RTC in 7-9 cases; two indicated that they had used the SAI-RTC in 4-6 cases; and one indicated that they had used the SAI-RTC in 1-3 cases.

Table 15. Breakdown of officers' responses to administration questions

	Never	Rarely	Sometimes	Often	Always
Completed at scene	3 (43%)	1 (14%)	1 (14%)	1 (14%)	1 (14%)
Taken away from scene	3 (43%)	0 (0%)	2 (28%)	2 (28%)	0 (0%)
Posted out to witness	1 (14%)	0 (0%)	1 (14%)	4 (57%)	1 (14%)

As can be seen in Table 15, only one officer indicated that they always administered the SAI-RTC at the scene, while three officers indicated that they never administered

the SAI-RTC at the scene. Officers were similarly split on handing out the SAI-RTC to witnesses to complete later; three officers never used the SAI-RTC in this way, while the remaining officers sometimes or often did. The most commonly reported method of administration was to post the SAI-RTC to witnesses later; one officer indicate that they always used the SAI-RTC in this way, with another five reporting that they often or sometimes did so.

Participants' open-ended responses frequently mentioned time and logistical constraints as reasons for handing the SAI-RTC to the witness for subsequent completion or for requesting that the form was posted to the witness (e.g., "Not practicable for witnesses to remain at scene for the length of time required to complete the SAI"; "Not always practical to complete roadside due to road conditions, weather conditions, or time restraints of witness"). Several participants also indicated that witnesses are often not in a fit state to complete the SAI-RTC at the scene (e.g., "It just didn't seem suitable. People just want to leave or are in shock"; "persons going to hospital, being traced after the incident"). Two participants indicated that they believed witnesses would provide more accurate accounts if they completed the form later than at the scene (e.g., "Time to think about the incident and give an accurate account"; "Because we need usable evidence rather than simply an account").

Table 16. Officers' perception of how the SAI-RTC compared to the control form

Dimension	Unfavourable	Equivalent	Favourable
Detail in statements	0 (0%)	6 (86%)	1 (14%)
Usefulness of statements	2 (29%)	4 (57%)	1 (14%)
Ease of finding information	2 (28%)	0 (0%)	5 (72%)
Need for follow up interview	4 (57%)	2 (28%)	1 (14%)
Pace of investigation	3 (43%)	4 (57%)	0 (0%)

Table 16 summarises officers' responses to the series of questions that required them to compare the SAI-RTC to the control form. For most of the questions, the modal response was that he SAI-RTC was similar to the control form; that is, the reports were just as detailed, the statements were as useful, and the investigation proceeded at a similar pace. However, in terms of ease of finding information within statements, the modal response was that the SAI-RTC compared favourably to the control form. In contrast, the modal response for needing follow-up contact with witnesses was that the SAI-RTC compared unfavourably to the control form.

In their open-ended comments, several officers commented that their perception was that fewer SAI-RTCs are returned than control forms, and that more reminders/follow-up contact is needed (e.g., "I have to chase up members of the public for return of the SAI, which I don't have to do with the F280, as they just got completed and returned"; "The percentage of forms received back from persons for SAI's is roughly half that of F280's"). Several also believed that the length of the SAI-RTC presents a barrier to completion, and that witnesses struggle to follow the instructions properly (e.g., "Whilst the form is more detailed the accounts received back are not as I believe most members of the public give up halfway through the

form – it is too long!!!", "Because the witness adds bits into different sections quite often in the wrong areas"). There was also a sense among several officers that the quality of statements from the control forms was already sufficient (e.g., "The F280 gave me what is needed to proceed to court for minor traffic offences to be dealt with at Magistrates Court"). Suggestions for improvement tended to revolve around simplifying and shortening the SAI-RTC in order to improve the quality of statements and to improve the return rate.

When asked whether a digital/online version of the SAI-RTC would be beneficial, opinion was divided. Three officers thought that a digital version would definitely or probably be beneficial, one was unsure, and three thought that it would definitely or probably not be beneficial. One officer indicated that they would be more likely to use a digital SAI-RTC at scene than a paper SAI-RTC; three indicated that they would be just as likely to use the digital SAI-RTC at the scene, and the remaining three officers indicated that they would be less likely to use the digital SAI-RTC at the scene.

Finally, three officers indicated that, given the choice, they would like to continue to use the SAI-RTC; these officers indicated that "the SAI has the greater potential" and that reports tended to provide "more details". The remaining four officers indicated that they would like to continue using the control form. These officers tended to report that the control form was already sufficient, that the SAI-RTC was too long and complicated for witnesses, and that it did not improve their ability to investigate collisions.

3.11. Witness feedback

Forty-nine witnesses (84%) answered the two closed questions at the beginning of the witness feedback survey. Most of these witness indicated that completing the SAI-RTC was either very easy (27%) or quite easy (57%), though some felt that it was quite difficult (12%) or very difficult (4%). Most of these witnesses also indicated that the SAI-RTC definitely (16%) or probably (55%) helped them remember the incident in more detail, though some reported that it probably (24%) or definitely (4%) did not.

31 witnesses responded to at least one of the open-ended comments. Positive comments were grouped around several themes:

i) Comprehensiveness (e.g., "Detailed instructions"; "Questions set up so there's nothing else you feel you need to add - covers all bases")

ii) Clarity of instructions (e.g., "Things were explained clearly"; "It is easy to follow and the instructions are clear")

iii) Being able to report memory at own pace (e.g., "Providing the information in my own time; Under no time pressure to complete allowing time to recall the incident")

Criticisms and suggestions for improvement were grouped around several themes:

i) Digital administration (e.g., "I would have preferred to type it rather than hand write"; "Make it electronic/digital")

ii) Lack of space for writing account (e.g., “There was insufficient space to write my account”; “Not enough space”)

iii) Length of form (e.g. “The length and repetitiveness”; “The amount of pages and information requested”)

iv) Lack of support while completing the form (e.g., “Easier to communicate with an officer; “Would prefer a face to face interview”; An option for someone to be with you (independently) for emotional support”)

vi) Delay before the SAI-RTC arrived (e.g., “Was given to me months after the incident so its hard to recall witness details etc.”; “Although it is still a very raw experience, it took 7 days to arrive. For people less affected, some information could be lost”)

4. Discussion

4.1. Summary of key aims and findings

This project aimed to develop and evaluate a tool for capturing high-quality, comprehensive accounts from witnesses to road traffic collisions: the SAI-RTC. The SAI-RTC was adapted from the original SAI© (Gabbert et al., 2009) in close collaboration with experienced roads policing officers. The tool was based on cutting-edge scientific understanding of memory reporting, incorporating best-practice interviewing techniques including: comprehensive and clear reporting instructions; mnemonic techniques such as mental reinstatement of context and sketching the scene; and open-ended prompts to provide multiple memory cues (e.g., Dando et al., 2009; Fisher & Geiselman, 1992). Teams of roads policing officers within South Wales Police were randomly assigned to receive training in the use of the SAI-RTC, or to a control group, who were to continue using standard operating procedures. Case disposal outcomes were then compared between SAI-RTC cases and control cases. In addition, the witness statements were coded using a comprehensive coding scheme, allowing for comparisons in the quantity and types of details reported by witnesses completing the SAI-RTC and witnesses completing the control forms.

In total, 218 eligible control forms and 58 eligible SAI-RTCs were completed by witnesses over the trial period; these came from 165 different incidents. Approximately 62% of SAI-RTC cases and 51% of control cases were prosecuted in Court; this difference was not statistically significant. Approximately 22% of all investigations were terminated with no further action being taken, a figure which was similar for SAI-RTC and control cases. The remaining 16% of SAI-RTC cases, and 28% of control cases, ended with action short of a prosecution (e.g., a warning or a driver awareness course); this difference was not statistically significant.

Statements produced using the SAI-RTC were considerably more detailed than those produced using the control form; on average, witnesses using the SAI-RTC reported approximately 57% more detail than participants who used the control form. This increase in quantity occurred for almost every type of detail that was coded, including Vehicle, Action, Person, Speed, Spatial, and Temporal details. Witnesses were also more likely to include information about discussions with other people, road conditions, weather, visibility, and their visual acuity when completing the SAI-RTC than when completing the control form.

4.2. Case disposal outcomes

As previously acknowledged, we did not find any statistically significant differences in case disposal outcomes between the SAI-RTC and control cases. However, it would be premature to conclude that the SAI-RTC does not influence case disposal outcomes, as it is important to consider alternative explanations for these null findings. First, we may have lacked statistical power to detect real, but small, differences between the two groups. Indeed, because these analyses were conducted at the level of cases (as opposed to statements), these analyses included only 31 SAI-RTC cases and 130 control cases. Consequently, the true difference

between conditions would have needed to be quite large to have been detected with reasonable power (Cohen, 1992).

Second, it is possible that there are opposing forces at work. More detailed witness accounts should enable officers to make more appropriate decisions about how to proceed with a case. Depending upon the particulars of the case, it may not be appropriate to prosecute a case in court; the appropriate action may, indeed, be to take action short of a court prosecution, or even to take no action at all. If the SAI-RTC provides officers with the detail needed to make more *appropriate* decisions (as opposed to more *punitive* decisions), then we would not necessarily predict a straightforward increase in court prosecutions when the SAI-RTC is used.

4.3. Details reported

The increase in detail associated with the SAI-RTC is consistent with the body of literature summarised by Horry et al. (2021) in their meta-analysis. Furthermore, as reported in several studies, the increase in detail was consistent across a wide range of detail categories (Gabbert et al., 2009; Hope et al., 2014). The effects were also quite large, which is consistent with the meta-analytic effect size for correct details reported by Horry et al. (2021).

To our knowledge, outside of individual case reports (e.g., Hope & Gabbert, 2011), these data provide the first empirical evidence that the SAI© is effective when used in real operational contexts with real witnesses. Though this was predicted, both on theoretical and empirical grounds, it was by no means a guaranteed outcome. Indeed, the experience of real witnesses differs in many ways from the experiences of a participant in a laboratory study, and these differences could have reduced the effectiveness of the SAI-RTC. For example, real witnesses are likely to experience much higher levels of stress than laboratory participants, and high levels of stress can impair memory (Deffenbacher et al, 2004). Even if the SAI-RTC is administered at the scene, real witnesses will typically experience longer delays before reporting their memories than laboratory participants; delay not only increases forgetting, but has also specifically been found to reduce the effectiveness of the SAI© (Paterson et al., 2015). Real witnesses are also likely to be more demographically diverse than witnesses who participate in laboratory studies, who are often young and well-educated. Where laboratory research has examined specific populations of people, such as those with Autism Spectrum Disorder, and second language responders, the effectiveness of the SAI© has been found to be significantly lower (e.g., Mac Giolla & Emberg, 2020; Maras et al., 2014). Yet despite the additional challenges facing real-world witnesses, and despite the lower control over extraneous variables afforded by a field trial, the SAI-RTC outperformed the control form across almost all types of detail that were coded.

Where does this benefit come from? Theoretically, there are three key ways in which the SAI-RTC could lead to more detailed witness reporting: 1) by reducing the delay between witnessing the event and providing the account, thereby minimising forgetting and opportunity for distortion; 2) by providing retrieval support, enabling witnesses to access a richer memorial representation of the event; 3) through

instructions that emphasise completeness, thereby altering witness expectations of what is expected of them.

As is discussed in more detail in the subsequent section, the way in which the SAI-RTC was implemented in the field trial makes explanation 1) an unlikely candidate for the consistent benefits observed. Very few SAI-RTCs were administered on the day of the collision. The remaining SAI-RTCs were administered in much the same way as the control form, in that they were subsequently posted to witnesses for completion. Therefore, most of the witnesses in the SAI-RTC condition experienced delays of days, or even weeks, before providing their account.

In our view, the most likely explanation is that the SAI-RTC provides witnesses with greater retrieval support, and has more comprehensive instructions that emphasise completeness. Indeed, the SAI-RTC incorporates several techniques that have been demonstrated to be highly effective when conducting investigative interviews, such as mental reinstatement of context, sketching, and use of open-ended prompts (Dando et al., 2009; Fisher & Gieselman, 1992; Memon et al., 2010). The SAI-RTC also has clear instructions that emphasise completeness of reporting, which have been shown to be effective in multiple laboratory studies (e.g., Colomb & Ginet, 2012; Milne & Bull, 2002). Indeed, by calibrating witness understanding of what constitutes a comprehensive account, there is even some evidence that the SAI© can 'train' witnesses to produce more detailed accounts of subsequent, unrelated events (Gawrylowicz et al., 2014). In summary, the SAI-RTC is effective because it provides witnesses with retrieval support and calibrates their expectations about the level of detail that is expected.

4.4. Implementation of the SAI-RTC

The SAI-RTC (along with the original SAI©) was designed to be administered at the scene wherever practicable, thereby minimising information loss due to forgetting, and minimising the potential exposure to misleading information from other sources. However, only a small number of SAI-RTCs (around 14%) were administered at the scene; the vast majority were subsequently posted to witnesses, leading to delays of days or weeks. Laboratory evidence suggests that the effectiveness of the SAI-RTC drops when it is administered after a delay of 24 hours or more (Paterson et al., 2015), which suggests that some of the potential benefits may not have been fully realised in this trial.

Nonetheless, it is important to understand how the SAI-RTC was used in the field, and why it was used in that way. Within the first few months of the trial, the operational decision was made by the Roads Policing Unit to administer the SAI-RTC in the same way as the control form; that is, the investigating officer would log a request for the form to be posted out for completion by the witness at a later date. This decision was driven by logistical challenges; frontline officers reported that the conditions rarely allowed for the witness to provide a detailed account while still at the scene. They also reported that witnesses were often in shock, distressed, or physically injured immediately following the event. Finally, officers felt that they lacked the resources and time to administer the form properly at the scene. Indeed,

these sentiments were borne out in our officer survey, with officers frequently citing time and logistical challenges to implementing the SAI-RTC at the scene.

It is encouraging that despite the average delay between the incident and completion of the SAI-RTC being approximately 10 days, it remained an effective tool. However, reducing the delay will be a goal of future research in this area. This could be achieved through digitising the tool, such that a secure link to an online version of the SAI-RTC is emailed to witnesses after the event. The investigating officer could trigger this action themselves, reducing the lag between the request being logged and the request being actioned. A digital version would also be received instantaneously, removing the 24-48 hour delay created by the postal process. Finally, the officers would receive the reports more rapidly, allowing them to more quickly determine any further actions that are required.

4.5. Limitations

The most pressing limitation of this trial was that statements were unbalanced between the two arms of the trial. Whereas we had hoped to achieve an approximately 1:1 ratio of control to SAI-RTC forms, the ratio was closer to 4:1. This disparity indicates that our attempt to randomise cases to groups was not entirely successful. Further evidence for this randomisation failure comes from comparing the characteristics of the SAI-RTC and control cases. Specifically, SAI-RTC cases were more likely to involve serious injury than control cases, and SAI-RTC statements were less likely to come from directly involved witnesses than control statements.

To ensure our results were not driven by these confounding variables, we included injury and role as covariates in all of our regression models, along with delay. Encouragingly, these covariates were rarely significant predictors of the outcome variables. In contrast, Condition tended to be a strong predictor of most outcomes. We can be reasonably confident, therefore, that the increases in reported detail can be attributed to the SAI-RTC itself, rather than to any differences in the characteristics of the cases.

Still, the question of why cases were so imbalanced remains. One possibility was that witnesses were declining to complete and return the SAI-RTC at a higher rate than the control form. However, we were able to rule out this possibility by examining return rates. Over the duration of the trial, 420 control forms were requested, of which approximately 56% were returned; in contrast, only 102 SAI-RTCs were requested, of which approximately 62% were returned. We can quite confidently state, therefore, that the imbalance was driven by fewer SAI-RTCs being requested than control forms over the duration of the trial. We note that this finding does not align with officers' perceptions; in the feedback survey, several officers commented that witnesses were less likely to return the SAI-RTC, or that they had to 'chase' witnesses to complete them. Because no systematic records of these reminders was readily accessible, we were unable to compare these follow-up contacts between groups. However, the data suggest that, potentially after some prompting, the SAI-RTC was returned at a similar rate to the control form.

Why were fewer SAI-RTCs requested than control forms over the duration of the trial? One possibility is that, in the early months of the trial, officers were finding themselves unable to administer the SAI-RTC at the scene of the incident (due to logistical challenges, or because witnesses were not in a fit state to complete the form), and that they therefore defaulted back to requesting a control form. To increase uptake, reminders were sent to officers in the SAI-RTC arm of the trial that they should request an SAI-RTC in place of the control form, though these reminders were of limited effectiveness. Our officer survey indicates that some officers may have defaulted back to the control form as they did not believe the SAI-RTC to be an improvement over the control form.

Interestingly, the officers' concerns about the length and complexity of the SAI-RTC were not borne out by the witness experience data. The majority of witnesses who completed the SAI-RTC also provided at least some user experience data. The overwhelming majority of witnesses (84%) indicated that the SAI-RTC was quite easy or very easy to complete, and 71% felt that the SAI-RTC helped them to remember the incident more clearly. Though some witnesses did suggest that the form could be simplified or reduced in length, most suggestions for improvement were around implementation. For example, many witnesses stated that they would have preferred to complete the form online and that they would have liked to receive the form more quickly. Some also expressed a preference for a face-to-face interview, either for ease or for emotional support. It is important to bear in mind, however, that we do not have witness experience data from those who did not return the SAI-RTC. It may be the case that witnesses who did find the form difficult or too long did not return the form, and so we may be overestimating ease of completion here.

Our intention had been to run refresher training every six months throughout the trial. Meeting with officers face-to-face at regular intervals would have provided valuable opportunities to discuss concerns and discuss ways forward. However, approximately eight months into the trial, the UK entered the first COVID-19 lockdown. The effect of this on policing was significant. Roads policing officers were frequently diverted to other duties concerned with enforcement of COVID restrictions, which increased operational demands and further stretched already limited resources. Restrictions on travel and on in-person meetings also presented significant logistical barriers to holding refresher training sessions. The net result of these combined impacts was that communication had to occur remotely – usually via email, though sometimes through conference calls – and the research team had very limited opportunities to directly engage with frontline officers.

While we acknowledge that the randomisation was imperfect, with officers in the SAI-RTC arm frequently defaulting to the control form, the data are nonetheless resoundingly consistent. Witnesses provide much more detail when completing the SAI-RTC than when completing the control form.

4.6. Future directions

The SAI-RTC was designed with the intention that it would be administered very quickly after an incident. While the SAI-RTC was associated with a large

increase in reported details, its effectiveness may have been reduced by delaying its administration (e.g., Paterson et al., 2015). Furthermore, response rates for the SAI-RTC, as well as for the control form, were far below 100%, indicating that a substantial amount of information was lost to the investigations. Reducing non-completion rates, and reducing the delay in administration, should both be goals for future developments in this area. Fortunately, there is good reason to think that both of these goals could be met through digital administration of the SAI-RTC.

To enable digital administration, a secure link could be emailed to witnesses by the investigating officer. Such an approach has many potential advantages. First, administrative and postal delays would be cut, allowing witnesses to complete their statements much more quickly following the event. Not only would memory be strongest at this point, but witnesses would likely be more highly motivated to aid the investigation. Second, with digital administration, email reminders could be automatically scheduled to further increase completion rates. Third, digital administration reduces barriers for witnesses as they do not need to physically post back their completed form, and many will likely view typing as less onerous than writing out a lengthy account by hand. Fourth, there would be considerable cost savings, as paper forms would not need to be printed, posted, scanned, and uploaded to the online incident log.

Of course, digital administration would need to be undertaken with care in order to ensure that the information is secure and fully compliant with data protection laws. There will also be some witnesses who would prefer to complete a paper form, perhaps because they are not proficient typists or because they do not have an internet connection or a suitable device on which to produce their report. For these reasons, online administration would also need to be accompanied by an option to complete a paper version of the form.

Finally, any digital version of the SAI-RTC would need to be properly evaluated. Key questions would be whether digitisation reduces delays, increases uptakes, and impacts case outcomes. Additionally, it would be important to evaluate whether witnesses produce reports of equivalent (or greater) detail when completing a digital form as when completing a pen-and-paper form.

5. Conclusions and Recommendations

The SAI-RTC is a reporting form designed specifically for witnesses to road traffic collisions. Rooted firmly in the science of effective investigative interviewing, the SAI-RTC incorporates detailed and clear instructions to witnesses, retrieval support, and open-ended prompts. The results of this field trial showed that the SAI-RTC allows witnesses to provide more detailed accounts of road traffic collisions than the standard reporting form in current usage. Furthermore, this increase in detail was observed across almost all categories of detail that were coded; witnesses report more person, action, vehicle, speed, spatial, and surrounding details. They are also more likely to report whether they have discussed the collision with anyone else and information pertaining to the weather, road conditions, visibility, and their visual acuity. This evidence strongly supports the conclusion that the SAI-RTC is an

effective tool for gathering detailed accounts of road traffic collisions from witnesses, without requiring an interviewer to be present.

The key recommendations that stem from this report are that the SAI-RTC could be incorporated into roads policing as a standard part of the investigative toolkit, to be used in cases where there are insufficient resources to conduct comprehensive in-person interviews with key witnesses. However, we would also recommend that procedures are put in place to minimise delays. These procedures could include having witnesses complete the SAI-RTC at the scene or handing the SAI-RTC to witnesses to complete at home. Where neither of these options are practicable, the SAI-RTC should be posted to witnesses as soon as possible. When forms are not returned, follow-up communications could be used to remind witnesses and encourage completion.

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7. Appendices

Appendix 1. Detailed exclusion justifications for each ineligible statement

In total, 113 statements were excluded. The most common reason for exclusion was that the case was not investigated by the Roads Policing Unit (RPU), but instead was attended by a Basic Command Unit (BCU) (n = 69); 27 statements were excluded because the witness did not see the collision or its immediate aftermath; six statements were excluded because the witness did not consent for their statement to be shared; one report was excluded because the witness did not provide any description of the event; and ten were excluded for other reasons.

Table A1. Exclusion justifications for all ineligible statements.

Statement ID	Type of statement	Exclusion category	Additional notes
1.	F280	Not a RPU case	BCU
2.	F280	Not a RPU case	BCU
3.	F280	Not a RPU case	BCU
4.	F280	Not a RPU case	BCU
5.	F280	Not a RPU case	BCU
6.	F280	Did not witness RTC/RTC aftermath	The incident happened in the middle of the night. The witness only seen damage to the vehicle the next day.
7.	F280	Not a RPU case	BCU
8.	F280	Not a RPU case	BCU
9.	F280	Not a RPU case	BCU
10.	F280	Not a RPU case	BCU
11.	F280	Not a RPU case	BCU
12.	F280	Other	This form is from the same witness as another statement.
13.	F280	Did not witness RTC/RTC aftermath	The incident happened in the middle of the night. The witness only seen damage to the vehicle the next day.
14.	F280	Not a RPU case	BCU
15.	F280	Did not witness RTC/RTC aftermath	The witness was woken by someone knocking on door at night, following the incident. The witness did not see/hear the incident.
16.	F280	Did not witness RTC/RTC aftermath	The witness was woken by someone knocking on door at night, following the incident. The witness did not see/hear the incident.
17.	F280	Did not witness RTC/RTC aftermath	The witness was in bed at the time of the incident and did not see/hear the incident.

18.	F280	Not a RPU case	BCU
19.	F280	Not a RPU case	BCU
20.	F280	Not a RPU case	BCU
21.	F280	Did not witness RTC/RTC aftermath	The witness was indoors at a doctor's appointment at the time and didn't see/hear the incident.
22.	F280	Did not witness RTC/RTC aftermath	The witness did not see the incident and only became aware of one due to seeing the damage to their vehicle. They then explain CCTV footage of the incident.
23.	F280	Not a RPU case	BCU
24.	F280	Not a RPU case	BCU
25.	F280	Not a RPU case	BCU
26.	F280	Not a RPU case	BCU
27.	F280	Not a RPU case	BCU
28.	F280	Not a RPU case	BCU
29.	F280	Not a RPU case	BCU
30.	F280	Not a RPU case	BCU
31.	F280	Not a RPU case	BCU
32.	F280	Not a RPU case	BCU
33.	F280	Not a RPU case	BCU
34.	F280	Not a RPU case	BCU
35.	F280	Not a RPU case	BCU
36.	F280	Did not witness RTC/RTC aftermath	The witness was at their brother's house when the RTC happened (streets away).
37.	F280	Did not witness RTC/RTC aftermath	The witness was in bed at the time of the incident. It was unclear if they heard the incident.
38.	F280	Did not witness RTC/RTC aftermath	The witness did not see the incident and only became aware of it due to seeing the damage to their vehicle. They then explain dashcam footage of the incident.
39.	F280	Not a RPU case	BCU
40.	F280	Other	Did not wish to provide a statement
41.	F280	Not a RPU case	BCU
42.	F280	Not a RPU case	BCU
43.	F280	Not a RPU case	BCU
44.	F280	Not a RPU case	BCU
45.	F280	Not a RPU case	BCU
46.	F280	Did not witness RTC/RTC aftermath	The witness was in church at the time of the incident. They did not hear the incident.
47.	F280	Did not witness RTC/RTC aftermath	The witness was in church at the time of the incident. They did not hear the incident.

48.	F280	Did not witness RTC/RTC aftermath	This 'statement' was a bill from a council worker for damage to a bollard.
49.	F280	Not a RPU case	BCU
50.	F280	Not a RPU case	BCU
51.	F280	Not a RPU case	BCU
52.	F280	Did not witness RTC/RTC aftermath	This witness did not see the incident and arrived after the RTC. The witness did not see the driving of the offender prior to the crash.
53.	F280	No consent provided	The witness has said they did not agree to releasing their statement.
54.	F280	Not a RPU case	BCU
55.	F280	Not a RPU case	BCU
56.	F280	Not a RPU case	BCU
57.	F280	Not a RPU case	BCU
58.	F280	Did not witness RTC/RTC aftermath	The witness did not see the RTC. A vehicle was on its roof when the witness turned a corner onto the street.
59.	F280	Not a RPU case	BCU
60.	F280	No narrative	No narrative account of the RTC.
61.	F280	Not a RPU case	BCU
62.	F280	Not a RPU case	BCU
63.	F280	Not a RPU case	BCU
64.	F280	Not a RPU case	BCU
65.	F280	Not a RPU case	BCU
66.	F280	Not a RPU case	BCU
67.	SAI-RTC	Did not witness RTC/RTC aftermath	This witness did not see the incident and arrived after the RTC. The witness did not see the driving of the offender prior to the crash.
68.	SAI-RTC	No consent provided	The witness has not agreed to share their statement
69.	F280	Did not witness RTC/RTC aftermath	The witness was indoors at the time of the RTC. It was unclear if the witness had heard the incident as they did not provide a full statement.
70.	F280	Did not witness RTC/RTC aftermath	The witness did not see the RTC and only realised it had happened after discovering damage to their vehicle. The witness did not see the driving of the offender at all.
71.	F280	Did not witness RTC/RTC aftermath	The witness was in their flat at the time of the RTC and it seems as though they only know the details of the incident via CCTV.

72.	F280	Not a RPU case	BCU
73.	F280	Not a RPU case	BCU
74.	SAI-RTC	Did not witness RTC/RTC aftermath	This witness did not see the incident and arrived after the RTC. The witness did not see the driving of the offender prior to the crash.
75.	F280	Other	The witness wanted the police to call for their statement.
76.	F280	Not a RPU case	BCU
77.	F280	Not a RPU case	BCU
78.	F280	Did not witness RTC/RTC aftermath	This witness did not see the incident and arrived after the RTC. The witness did not see the driving of the offender prior to the crash and did not witness the immediate aftermath of the incident. Whilst at the scene the witness did not witness anything critical to the incident.
79.	SAI-RTC	No consent provided	The witness did not give consent for their statement to be released to third parties.
80.	F280	Not a RPU case	BCU
81.	F280	Not a RPU case	BCU
82.	F280	Did not witness RTC/RTC aftermath	This witness was indoors at the time of the RTC and only became aware after someone told them what had happened.
83.	F280	Not a RPU case	BCU
84.	F280	Not a RPU case	BCU
85.	F280	Not a RPU case	BCU
86.	F280	Did not witness RTC/RTC aftermath	This witness did not see the incident and arrived after the RTC. The witness did not see the driving of the offender prior to the crash. Whilst at the scene the witness did not witness anything critical to the incident.
87.	F280	No consent provided	The witness did not give consent for their statement to be released to third parties.
88.	F280	Not a RPU case	BCU
89.	F280	Not a RPU case	BCU
90.	F280	Did not witness RTC/RTC aftermath	This witness did not see the incident and arrived after the RTC. The witness did not see the driving of the offender prior to the crash.
91.	F280	Did not witness RTC/RTC aftermath	This witness did not see the incident and arrived after the RTC. The witness did not see the driving

			of the offender prior to the crash. Whilst at the scene the witness did not witness anything critical to the incident.
92.	F280	Other	The witness did not wish to provide a statement.
93.	F280	Did not witness RTC/RTC aftermath	The witness did not see the RTC and only knew about it after hearing about it via a text and seeing damage to their vehicle.
94.	F280	Not a RPU case	BCU
95.	F280	Did not witness RTC/RTC aftermath	This witness did not see the incident and arrived after the RTC. The witness did not see the driving of the offender prior to the crash. Whilst at the scene the witness did not witness anything critical to the incident (although the offender did admit to the witness that they had been taking drugs/drinking all day).
96.	F280	Not a RPU case	BCU
97.	SAI-RTC	No consent provided	The witness did not provide consent for their statement to be used to evaluate the SAI-RTC.
98.	F280	Not a RPU case	BCU
99.	F280	Not a RPU case	BCU
100.	F280	Not a RPU case	BCU
101.	F280	Other	The witness was aged under 18
102.	F280	Other	The witness asked for police to call for their statement
103.	F280	Other	Someone else wrote the statement for the witness because they are not native English speakers.
104.	F280	Other	The witness was aged under 18
105.	F280	No consent provided	The witness said yes to sharing their statement but only if absolutely necessary.
106.	F280	Other	The witness was aged under 18
107.	F280	Other	The witness asked for police to call for their statement
108.	F280	Not a RPU case	BCU
109.	F280	Not a RPU case	BCU
110.	F280	Not a RPU case	BCU
111.	F280	Not a RPU case	BCU
112.	F280	Not a RPU case	BCU
113.	F280	Not a RPU case	BCU

Appendix 2. Regression models for detail categories

Regression models included random intercepts for Case. Model comparison is the comparison between a Covariates model (including main effects of Injury, Delay, and Role) and the final model which also included Condition as a predictor. A positive coefficient for Condition indicates that more details were reported in the SAI-RTC condition than in the control condition. Regression models are summarised in Table A2.

Table A2. Regression models predicting case outcomes from Condition

Parameter	Coefficient [with 95% CI]	Statistical significance
A) Person details		
Intercept	20.28 [15.83, 24.73]	
Injury (Injury vs Non-Injury)	0.16 [-4.23, 4.54]	t = 0.07, p = .94
Delay	-0.03 [-0.09, 0.02]	t = -1.10, p = .27
Role (Non-involved vs Involved)	2.39 [-1.16, 5.93]	t = 1.32, p = .19
Condition (SAI-RTC vs Control)	**12.98 [8.13, 17.84]**	***t* = 5.24, *p* < .001**
Model comparison: $\chi^2(1) = 24.16$, $p < .001$		
B) Vehicle details		
Intercept	10.60 [8.83, 12.38]	
Injury (Injury vs Non-Injury)	-1.85 [-3.62, -0.08]	t = -2.05, p = .04
Delay	-0.01 [-0.04, 0.01]	t = -1.26, p = .21
Role (Non-involved vs Involved)	1.80 [0.43, 3.18]	t = 2.57, p = .01
Condition (SAI-RTC vs Control)	**4.04 [2.07, 6.02]**	***t* = 4.01, *p* < .001**
Model comparison: $\chi^2(1) = 15.36$, $p < .001$		
C) Action details		
Intercept	21.35 [17.35, 25.35]	
Injury (Injury vs Non-Injury)	-1.60 [-5.55, 2.36]	t = -0.79, p = .43
Delay	-0.04 [-0.09, 0.01]	t = -1.52, p = .13
Role (Non-involved vs Involved)	1.60 [-1.56, 4.75]	t = 0.99, p = .32
Condition (SAI-RTC vs Control)	**9.45 [5.05, 13.84]**	***t* = 4.21, *p* < .001**
Model comparison: $\chi^2(1) = 16.32$, $p < .001$		
D) Object details		
Intercept	3.99 [3.09, 4.90]	
Injury (Injury vs Non-Injury)	-0.72 [-1.60, 0.17]	t = -1.59, p = .11
Delay	-0.01 [-0.02, 0.003]	t = -1.30, p = .19
Role (Non-involved vs Involved)	-0.65 [-1.38, 0.07]	t = 0.99, p = .32
Condition (SAI-RTC vs Control)	**0.64 [-0.33, 1.62]**	***t* = 1.29, *p* = .10**
Model comparison: $\chi^2(1) = 1.70$, $p = .19$		
E) Temporal details		
Intercept	8.41 [6.68, 10.13]	
Injury (Injury vs Non-Injury)	0.02 [-1.69, 1.74]	t = 0.03, p = .98
Delay	-0.01 [-0.03, 0.01]	t = -1.05, p = .29
Role (Non-involved vs Involved)	0.23 [-1.11, 1.57]	t = 0.34, p = .74
Condition (SAI-RTC vs Control)	**4.46 [2.55, 6.38]**	***t* = 4.57, *p* < .001**
Model comparison: $\chi^2(1) = 19.53$, $p < .001$		
F) Speed details		
Intercept	1.75 [1.38, 2.13]	
Injury (Injury vs Non-Injury)	-0.54 [-0.91, -0.18]	t = -2.93, p = .004

Delay	0.001 [-0.003, 0.01]	t = 0.54, p = .59
Role (Non-involved vs Involved)	-0.21 [-0.52, 0.10]	t = -1.351, p = .18
Condition (SAI-RTC vs Control)	**0.55 [0.15, 0.95]**	***t* = 2.72, *p* = .004**
Model comparison: $\chi^2(1) = 7.30$, $p = .007$		
G) Surrounding details		
Intercept	4.74 [3.94, 5.54]	
Injury (Injury vs Non-Injury)	-0.36 [-1.15, 0.42]	t = -0.91, p = .37
Delay	0.004 [-0.01, 0.01]	t = 0.82, p = .42
Role (Non-involved vs Involved)	-0.59 [-1.25, 0.06]	t = -1.77, p = .08
Condition (SAI-RTC vs Control)	**3.71 [2.86, 4.57]**	***t* = 8.50, *p* < .001**
Model comparison: $\chi^2(1) = 59.27$, $p < .001$		
H) Spatial details		
Intercept	16.88 [13.57, 20.19]	
Injury (Injury vs Non-Injury)	-0.90 [-4.12, 2.32]	t = -0.55, p = .59
Delay	-0.01 [-0.06, 0.03]	t = -0.69, p = .49
Role (Non-involved vs Involved)	2.33 [-0.40, 5.06]	t = 1.67, p = .10
Condition (SAI-RTC vs Control)	**6.72 [3.23, 10.22]**	***t* = 3.77, *p* < .001**
Model comparison: $\chi^2(1) = 13.05$, $p < .001$		
I) Incident critical details		
Intercept	4.79 [4.01, 5.58]	
Injury (Injury vs Non-Injury)	-1.36 [-2.15, -0.58]	t = -3.41, p < .001
Delay	0.001 [-0.01, 0.01]	t = 0.17, p = .87
Role (Non-involved vs Involved)	-0.92 [-1.51, -0.32]	t = -3.01, p = .003
Condition (SAI-RTC vs Control)	**1.65 [0.77, 2.53]**	***t* = 3.68, *p* < .001**
Model comparison: $\chi^2(1) = 12.81$, $p < .001$		

Note: Model comparison = comparison between models that omit vs include the fixed effect of condition. The coefficient for the fixed effect of Condition is shown in bold.

Appendix 3. Regression models for presence or absence of information

Random intercepts for case were not included in these models, as they rendered the coefficients uninterpretable. Model comparison is the comparison between a Covariates model (including main effects of Injury, Delay, and Role) and the final model which also included Condition as a predictor. A positive coefficient for Condition indicates that more details were reported in the SAI-RTC condition than in the control condition. Regression models are summarised in Table A3.

Table A3. Regression models predicting presence/absence of specified information from Condition

Parameter	Coefficient [with 95% CI]	Statistical significance
A) Discussion during		
Intercept	0.43 [-0.15, 1.03]	
Injury (Injury vs Non-Injury)	-0.03 [-0.61, 0.54]	z = 1.44, p = .91
Delay	-0.001 [-0.008, 0.007]	z= -0.11, p = .88
Role (Non-involved vs Involved)	-0.31 [-0.81, 0.19]	z = -0.16, p = .22
Condition (SAI-RTC vs Control)	**1.04 [0.38, 1.75]**	***z* = 2.98, *p* = .003**
Model comparison: $\chi^2(1) = 9.92$, $p = .002$		
B) Discussion post-incident		
Intercept	-2.88 [-4.05, -1.89]	
Injury (Injury vs Non-Injury)	-0.23 [-1.14, 0.77]	z = -0.47, p = .64
Delay	0.002 [-0.01, 0.01]	z= 0.35, p = .73
Role (Non-involved vs Involved)	0.32 [-0.53, 1.17]	z = 0.73, p = .46
Condition (SAI-RTC vs Control)	**1.84 [1.02, 2.69]**	***z* = 4.37, *p* < .001**
Model comparison: $\chi^2(1) = 18.89$, p <.001		
C) Vision		
Intercept	-2.57 [-4.70, -1.05]	
Injury (Injury vs Non-Injury)	-0.93 [-3.07, 1.09]	z = -0.92, p = .36
Delay	-0.03 [-0.06, -0.01]	z = -2.26, p = .02
Role (Non-involved vs Involved)	-2.67 [-6.84, -0.29]	z = -1.70, p = .09
Condition (SAI-RTC vs Control)	**9.45 [5.05, 13.84]**	***z* = 5.17, *p* < .001**
Model comparison: $\chi^2(1) = 224.90$, p <.001		
D) Weather conditions		
Intercept	0.57 [-0.04, 1.21]	
Injury (Injury vs Non-Injury)	0.27 [-0.36, 0.89]	z = 0.84, p = .40
Delay	0.002 [-0.006, 0.011]	z = 0.46, p = .65
Role (Non-involved vs Involved)	-0.47 [-1.02, 0.09]	z = -1.65, p = .10
Condition (SAI-RTC vs Control)	**2.38 [1.33, 3.82]**	***z* = 3.88, *p* < .001**
Model comparison: $\chi^2(1) = 26.91$, $p < .001$		
E) Road conditions		
Intercept	1.14 [0.44, 1.89]	
Injury (Injury vs Non-Injury)	0.32 [-0.42, 1.03]	z = 0.88, p = .38
Delay	0.01 [-0.04, 0.02]	z = 1.09, p = .28
Role (Non-involved vs Involved)	-0.43 [-1.08, 0.22]	z = -1.29, p = .20
Condition (SAI-RTC vs Control)	**2.09 [0.86, 3.93]**	***z* = 2.81, *p* = .005**
Model comparison: $\chi^2(1) = 13.75$, $p < .001$		

F) Visibility		
Intercept	0.37 [-0.22, 0.96]	
Injury (Injury vs Non-Injury)	-0.25 [-0.83, 0.32]	z = -0.85, p = .39
Delay	-0.005 [-0.01, 0.003]	z = -1.27, p = .21
Role (Non-involved vs Involved)	-0.10 [-0.60, 0.39]	z = -0.40, p = .69
Condition (SAI-RTC vs Control)	**1.25 [0.60, 1.96]**	**z = 3.61, p < .001**
Model comparison: $\chi^2(1) = 14.82$, $p < .001$		
G) Sketch		
Intercept	-3.68 [-5.43, -2.27]	
Injury (Injury vs Non-Injury)	-0.31 [-1.77, 1.21]	z = -0.42, p = .67
Delay	0.005 [-0.01, 0.02]	z = 0.62, p = .54
Role (Non-involved vs Involved)	0.36 [-0.95, 1.68]	z = 0.56, p = .58
Condition (SAI-RTC vs Control)	**6.19 [4.98, 7.69]**	**z = 9.10, p < .001**
Model comparison: $\chi^2(1) = 83.21$, $p < .001$		

Note: Model comparison = comparison between models that omit vs include the fixed effect of condition. The coefficient for the fixed effect of Condition is shown in bold.