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Say it to my face: Examining the effects of socially encountered misinformation

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Abstract

Purpose. Errors in eyewitness accounts can occur when a witness comes into contact with post-event 'misinformation'. A common way to encounter misinformation is through face-to-face interaction, in particular via conversation with other individuals who also witnessed the crime. The current research compares this kind of misinformation with the non-social post event narrative method typically employed in laboratory studies.

Method. Young (17-33 years) and older (58-80 years) adults viewed a simulated crime-event on video and were later exposed to four items of misinformation about it. The misinformation items were either introduced as part of a discussion about the event with a confederate or were embedded within a written-narrative about the event that participants were asked to read. A questionnaire containing twenty items about the event was given to participants before and after the experimental manipulation.

Results. Participants were less accurate than controls on questionnaire items after encountering misinformation. More importantly, misinformation encountered socially was significantly more misleading than misinformation from a non-social source. This was true for both young and older adults.

Conclusion. Misinformation encountered socially produced more errors than misinformation from a non-social source. This finding has implications both for applied (forensic) and theoretical understanding of eyewitness memory.

(198 words, 250 max)

Say it to my face: Examining the effects of socially encountered misinformation

When asked to remember an event, people often report information that they have encountered after the event, rather than what they originally experienced (Loftus, 1979). Within the eyewitness literature there has been a particular focus on the effects of encountering *errant* post-event information (misinformation), as this is a potentially serious cause of witness error. The act of reporting misinformation in place of the original information is known as the 'misinformation effect' (see Ayers & Reder, 1998; Wright & Loftus, 1998, for reviews of competing explanations for the misinformation effect).

In real life, a common way to encounter post-event information is through face-to-face interaction, during conversation for example. Sharing our memories with others is a natural everyday activity, thus the potential to encounter misinformation in this way is considerable. However, with a few exceptions (see below), experimental eyewitness research has introduced misinformation to participants in several decidedly 'non-social' ways. For example, it has been incorporated into written post-event narratives (Searcy, Bartlett & Memon, 2000; Wright & Stroud, 1998) or embedded within questions about the event (Loftus & Palmer, 1974). The literature provides ample evidence that such sources of misinformation can significantly distort reports of memory for an event.

In our own prior studies (Gabbert, Memon & Allan, 2003; Wright, Self & Justice, 2000) we have demonstrated that significant memory distortion also arises when co-witnesses are allowed to discuss an event with one another prior to their memory being tested. This can result in 'memory conformity' where the individual memory report of one person becomes more similar to another person's memory

report following their discussion of an event. We consider this to be not only a 'natural' source of misinformation but also, potentially, a very powerful one due to a variety of factors inherent in social discourse. The purpose of the experiment reported here was to examine whether, in fact, misinformation effects produced by 'conformity' between co-witnesses exceed those produced by non-social sources of influence more typically employed in eyewitness research.

One of the first studies to investigate memory conformity was Schneider and Watkins (1996). Their research was inspired by Asch's (1956) classic studies of conformity in perception. Schneider and Watkins (1996, Experiment 2) presented pairs of participants with several words and then gave an old/new recognition test of the previously seen target words plus several previously unseen lures. One participant in each of the pairs was a confederate whose recognition response was given before the true participant gave his or her answer. The confederate's response was either the correct answer or an incorrect answer. Results indicated that participants often complied with the answer given by the confederate, even when it was incorrect.

In our recent research we have investigated memory conformity under ecologically valid conditions that approximate how memory conformity occurs in real-life. For example, Gabbert et al (2003) and Wright et al (2000) showed that a memory conformity effect can occur following a natural discussion between two witnesses about a mutually witnessed event. Wright et al (2000, Experiment 2) showed pairs of participants an identical crime, except that half saw an accomplice with the thief, and half did not. Initial memories were very accurate, but after discussing the crime with the other person in the pair, who saw a slightly different sequence, three quarters of the pairs exhibited conformity.

Gabbert et al (2003) investigated memory conformity effects between pairs of participants who viewed a simulated crime event on video. Participants were led to believe that they were seeing the same video of a crime scene. Although the two video clips contained exactly the same sequence of events, they were filmed from different angles to simulate different witness perspectives. Critically, this manipulation allowed different features of the event to be observed for each participant. After viewing, participants were asked to recall the event either alone or in pairs. An individual recall test was then administered to examine the effects of co-witness discussion on subsequent memory reports. A significant proportion (71%) of witnesses who had discussed the event reported at least one (out of two) erroneous detail acquired during the discussion with their co-witness.

The current study builds upon our prior research by investigating whether errant post-event information encountered during a discussion results in a larger misinformation effect than when it is encountered non-socially (i.e. when reading a post event narrative). As indicated above, we believe that people will be more susceptible to post-event information if it is encountered in a social interaction. For example, people generally assume that information exchanged during the course of a normal discussion is truthful and accurate (see Grice, 1975; Swann, Giuliano & Wegner, 1982). Moreover, people may often want to appear to be in agreement with others, to appear more likeable (see Tajfel & Turner, 1986).

Furthermore, the very medium of the post-event narrative, i.e., text, cannot convey additional information such as non-verbal influences (e.g. eye-contact, facial expressions, etc) or subtle social cues (e.g. perceived credibility, trustworthiness, confidence, etc) that may impact upon a person's acceptance of information. The potential for experimenter-induced bias provides a good and pertinent example of

such (unintentional) non-verbally introduced effects that can alter results in line with the experimenter's expectations (see Rosenthal, 1969). In this study we hold all experimental factors constant apart from the source of misinformation in order to investigate whether participants are more influenced by post-event information when it is encountered as part of a discussion than as part of a written narrative.

In addition, the current study explores age differences in susceptibility to the post-event information presented socially or non-socially. Although it does seem clear that ageing is associated with increases in 'source confusion' that may exacerbate the distorting effect of misinformation (Schacter, Kihlstrom, Kaszniak & Valdiserri, 1993), the existing eyewitness literature is inconsistent with regard to age-related changes in susceptibility to post-event misinformation. Mitchell, Johnson and Mather (2003) explored age differences in source monitoring performance using a standard misinformation paradigm and found that older adults (M = 76 years) were more likely than young adults (M = 19 years) to say that they saw information that was actually only suggested to them. Older adults were also found to be more confident in their source misattributions than were younger adults. Similarly, Karpel, Hoyer and Toglia (2001) found that older adults (M = 73 years) were more likely than young adults (M = 19 years) to falsely report items that had only been suggested to them (see also Cohen & Faulkner, 1989; Loftus, Levidow & Deunsing, 1992).

In contrast, Searcy et al (2000) found no significant differences in the susceptibility of young (M = 24 years) and elderly adults (M = 69 years) to misinformation (see also Bornstein, Witt, Cherry & Greene, 2000; Coxon & Valentine, 1997). Furthermore, Gabbert et al (2003) found that older adults (M = 69 years) were just as susceptible to memory conformity as young adults (M = 20 years). This was despite the fact their memory performance was poorer than younger adults

in terms of the amount of correct items of information reported about the event. The inconsistent effect of ageing on susceptibility to misinformation clearly warrants further investigation.

It is also possible that age-related differences in susceptibility to post-event information might be exaggerated when the information is encountered as part of social interaction. For example, older adults are often aware that certain memory abilities decline with age, so tend to be less confident about trusting their own memory (Stevens, Kaplan, Ponds, Diederiks, & Jolles, 1999). Having less confidence in one's own memory might entail greater reliance on other sources of information. Thus, Dixon (1992; 1996; see also Craik, 1986) proposed that in everyday life older adults might compensate for memory decline by using external memory aids such as writing lists, keeping a diary, etc. Collaboration with other individuals has been recognised as a common compensatory mechanism for older adults to employ (Dixon, 1996; Thompson & Conway, 2001). One possible side-effect of this compensatory mechanism, that we intend to explore in the current research, is whether older adults are increasingly susceptible to post-event information encountered during collaborative recall as opposed to post-event information encountered via some non-social source, such as reading a narrative.

In summary, the current research aims to explore the differential effects that alternative sources of post-event information can have on recall for a witnessed event. We propose that post-event information encountered as part of a social interaction will be more likely to distort memory reports than a post-event narrative. We also examine whether there are age-related differences in susceptibility to the post-event information.

Method

Participants and Design

A total of 210 participants were tested. This n was based on power analysis for approximately a medium effect size, and at an α of .05 (Cohen, 1977, table 7.3.16). Of the 210 participants, 108 were undergraduate students from the University of Aberdeen (17-33 years; M = 20.39; SD = 3.5), taking part in return for course-credit. The remaining 102 participants were older adults recruited from the local community (58-80 years; M = 68.92; SD = 5.9) who were paid for their contribution to the study. The older participants underwent the Memory Impairment Screen (MIS, Buschke, Kuslansky, Katz, Stewart, Sliwinsky, Eckholdt & Lipton, 1999). This is a screening tool designed to identify individuals who should be considered for further evaluation for possible Alzheimer's disease or other forms of dementia. A cut off score of 4 or less suggests impairment and warrants appropriate diagnostic assessment. The mean score in the current study was 7.77 (Range = 5 to 8). Thus no older participants were excluded.

The study employed a 3 (condition: biased confederate; biased narrative; control) X 2 (age-group: young; old) between subjects design.

Materials

Event. A simulated robbery (1 minute, 25 seconds) was filmed at a Blockbuster Video store. The characters in the event included two robbers, one employee, and one customer.

Recall Measures. A cued recall questionnaire containing twenty questions about the event (see Appendix One) was given to participants before and after the manipulation phase. Of these twenty questions, four related to the items of misinformation given in the experimental manipulation (in the confederate and post-

event narrative conditions). These four questions could be answered with details witnessed in the event or with the misinformation. The remaining sixteen questions were neutral, and could be answered with details from the event only.

Procedure

Participants took part individually. Those participants in the biased-confederate condition completed the experiment with a confederate whom they believed to be another participant. Participants were always matched with confederates from the same age group as themselves. The confederates were trained to act as though they were a genuine naïve participant who had never before met the experimenter nor completed the experiment.

On arrival, participants were seated in front of the television monitor and asked to watch a short video. In the biased-confederate condition, the participant and confederate watched the video together. Ten minutes of filler tasks followed. Participants were then given the 20-item cued-recall questionnaire to complete, and were asked not to guess at any answer. No time limits were imposed. On completion, participants completed a further 20 minutes of filler tasks before the manipulation phase.

Participants in the biased-narrative condition were asked to read through a typed post-event narrative containing a summary of the event seen earlier on video. They were informed that the narrative was an account given by a previous participant within the same age group as themselves. The narrative described the event, but did not contain details that could be used to answer any of the 16 neutral items in the cued-recall questionnaire. Crucially, four items of misinformation were embedded within the narrative, suggesting that;

1) the employee was stacking shelves at the beginning of the video (whereas in fact he was standing by the till),
2) the main robber handed the bag of stolen money to his accomplice before leaving the store (in fact this does not happen),
3) the main robber was wearing a leather jacket (in fact he was wearing a cloth jacket with two white stripes),
4) the main robber's accomplice had a gun (in fact he had nothing in his hands at all).

Participants were allowed to read through the narrative at their own pace. In response to questions (e.g. "Did this happen?"), the experimenter simply re-iterated that the narrative was simply a previous participant's account and that no further information could be provided.

Participants in the biased-confederate condition were instructed that they had a short amount of time to discuss the video together as a pair (i.e., with the confederate). The confederate was trained to disclose the same information, and misinformation, as was present in the biased post-event narrative. In the face of disagreement from the real participant, the confederate was instructed to simply state "Oh, well I thought I saw…(the repeated relevant item of misinformation)" rather than pursue an argument about what actually happened. If the participant talked about items that were relevant to the 16 neutral questions the confederate was trained to listen without comment, and then steer the conversation back to event details that were of no relation to the recall test.

The narrative used in the control condition was the same as in the biased post-narrative condition, but with the four items of misinformation omitted. As such, the content was accurate, but could not be used to answer any of the cued-recall questions.

When the manipulation phase was complete, participants engaged in a further 20 minutes of filler tasks before being given the same 20 item cued-recall questionnaire once again. Participants were instructed to answer the questions with *details recalled from the video*. This instruction was written at the top of the questionnaire as well as being emphasised by the experimenter. Once again, participants were reminded not to guess at any of the answers. Finally, a manipulation check was given. Participants were asked if they had guessed the true purpose of the experiment, to which no one expressed suspicion. Furthermore, those in the biased-confederate condition were typically surprised to learn that the confederate was not actually a true participant.

Coding.

The 20 item cued-recall questionnaire given prior to the manipulation phase was scored in terms of the number of *neutral* questions correctly answered (thus the maximum score possible is 16). At the second completion of this questionnaire (post manipulation phase) the 16 neutral questions were scored as before, and a 'misinformation score' was calculated by counting how many of the four critical questions had been answered with misinformation. This 'misinformation score' comprised answers that had *changed* from the original response given in the first recall questionnaire, and those answers that had been *added* after no response had originally been provided (see Table 1).

(Table 1 about here)

Inter-rater reliability checks, based on a random sample of ten transcripts, showed a significant level of agreement between two independent coders for the accuracy scores in Recall 1 (r = .93), Recall 2 (r = .95), and for the 'misinformation' scores (r = 1.00).

Results

Our analyses of memory conformity and memory accuracy focused on two issues: First, are witnesses more likely to conform to post-event information encountered during a discussion (socially) than acquired from a written narrative (non-socially)? Second, is the pattern of results achieved replicated within the sample of older adults?

Memory Conformity.

Data from the control group were initially explored to check that critical items were not reported in this condition. By chance, participants had reported a single critical item on two occasions that had neither been witnessed nor encountered as post-event information. In comparison to control group data, participants in the biased-confederate and biased-narrative conditions often reported misinformation. The means for young and old participants combined were .03, 1.77, and 1.27 for the control, biased-confederate, and biased-narrative conditions respectively. With only two reports of misinformation, the data from the control group do not meet the assumptions for further statistical tests. Therefore the remaining analyses will focus on the two experimental groups.

A Univariate ANOVA was performed to examine the average number of misinformation items (out of four) reported by condition (biased-confederate, biased-narrative) and age group (young, old). A main effect of condition was revealed (F (1, 136) = 5.65; p = .019; MSe = 8.54; η^2 = .04), where participants (young and old combined) were more influenced in the biased-confederate condition than the biased-narrative condition (M's = 1.77 and 1.27, respectively). Calculating the odds ratio revealed that the odds of reporting misinformation was 1.70 times higher for

participants in the biased-confederate condition rather than the biased-narrative condition.

A main effect of age group was also found (F (1, 136) = 8.71; p = .004; MSe = 13.17; η^2 = .06), with young participants reporting significantly more misinformation than older participants overall ($M's$ = 1.82, and 1.21, for young and old participants respectively). No significant interaction was apparent between age group and condition (p = 34; F < 1). See Table 2 for the percentage of misinformation reported by age group and experimental condition.

(Table 2 about here)

Changes and Additions.

The items of misinformation reported in recall-two were further analysed to see how many answers had *changed* from the original response given in recall-one, and how many answers had been *added*, following no response being given originally in recall-one (please refer back to Table 1 for examples of each). Within the biased-narrative condition, 41.6% of responses had changed from an original response. In the biased-confederate condition 55.7% of responses had been changed. Thus, participants were more likely to *change* an original response when in the biased-confederate condition as opposed to the biased-narrative condition (t = 3.02; df = 138; p = .003). No differences between the experimental conditions were found in relation to the number of *additions* that had been made (t = .29; df = 138; p = .77).

Memory Accuracy.

Accuracy was measured using the number of correct responses given to the 16 neutral questions in the cued-recall questionnaire. Recall 1 (pre-manipulation stage)

and Recall 2 (post-manipulation stage) were initially examined individually (see Table 3 for the mean accuracy scores).

(Table 3 about here)

A Univariate ANOVA, with the number of correct responses to the 16 neutral questions in Recall One as the dependent variable, found a main effect of age-group (F (1, 204) = 60.10; p < .001; MSE = 280.16; η^2 = .23), where younger adults were more accurate overall (M's = 10.05 and 7.74 for younger and older adults respectively). No main effect of experimental condition was found, and there was no significant interaction between age group and experimental condition (F's < 1).

The same analysis for Recall Two revealed a significant interaction between age group and experimental condition (F (2, 204) = 6.31; p = .002; MSe = 26.79; η^2 = .06). Older adults were significantly less accurate than young adults in the control and biased-narrative conditions, however, those in the biased-confederate condition performed at a level that did not significantly differ to younger adults (F (1, 68) = 2.83; p = .10; MSe = 13.92; η^2 = .04). Thus it seems that discussion with a confederate actually aided the memory performance of older adults.[1]

When comparing performance in Recall 1 to that in Recall 2, both young and older adults were found to report significantly more correct responses when answering the questions for the second time (F (1, 105) = 62.37; p < .001; MSe = 75.85; η^2 = .37, and F (1, 99) = 64.53; p < .001; MSe = 70.59; η^2 = .40, for young and older adults respectively). No interaction between performance on the recall questionnaires and experimental condition was found for the young adults (F<1). However, this interaction was significant for the older adults (F (2, 99) = 14.68; p < .001; MSe = 16.06; η^2 = .23) indicating that older adults in the biased confederate

[1] People in the confederate condition reported more misinformation and more correct information than people in the biased narrative condition. If analyses are run in a combined repeated measures analysis on the proportion recalled, the interaction between type of item and condition is nonsignificant (F<1).

group performed significantly better in Recall 2 than those in the other two experimental groups (as mentioned previously).

Discussion

We observed significant differences in susceptibility to post-event misinformation originating from a social versus a non-social source. Our hypothesis was confirmed, for both the young and the older groups, that socially encountered misinformation would distort memory reports more than non-socially encountered misinformation. It is important to note that the memory accuracy results from Recall One (pre-manipulation) indicate that participants' receiving social and non-social forms of misinformation had equivalent memory performance. This finding indicates that the more substantial effect of the socially encountered misinformation at Recall Two was not due to pre-existing group differences in memory.

Chiefly, the present findings demonstrate the potent influence upon memory of misinformation conveyed to an eyewitness in the 'natural' context of a discussion. When conveyed socially in this way the misinformation not only distorts the accuracy of an eyewitness report, it also produces systematic but spurious correspondences between witness reports. The relative strength of the misinformation effect demonstrated here, and the obvious forensic problem produced by witnesses who conform, makes for an unfortunate combination. All the more unfortunate because in the forensic setting it is often the case that witnesses who have just seen a crime are likely to discuss their experience with one another. For example, a recent survey (Paterson & Kemp, 2003) of real-life eyewitnesses in Australia found that 86% of respondents who had co-witnessed a criminal event admitted to discussing it with another witness. The present findings suggest that if one witness recalls errant pieces

of information then these could very well have a negative influence upon the other witness's memory for what actually happened. Moreover, as noted above, in the forensic situation conformity between eyewitnesses could produce falsely corroborating elements in their reports, with serious consequences for the criminal investigation in which the witnesses are taking part. Witness evidence has been contaminated in exactly this way in some high-profile cases, such as the Oklahoma Bombing Trial (see Memon & Wright, 1999).

Very few studies within the eyewitness literature have employed a confederate to impart misinformation during a live interaction. Our findings here suggest that studies which have employed other means, for example presenting misleading information from a fictitious co-witness, with no interaction (see Betz, Skowronski, & Ostrom, 1996; Luus & Wells, 1994, Experiment 1), may considerably *underestimate* the level of distortion produced by social interaction. Our findings therefore underline the importance of ecological validity in laboratory-based studies of social influence upon eyewitness memory.

Similar conclusions have recently been drawn by Meade and Roediger (2002), using a recognition test rather than a recall test. Meade and Roediger (2002) examined the impact of social influence on the development of false memories across a series of experiments. They discovered, serendipitously, that post-event information had a greater impact when supplied by an *actual* confederate rather than a *hypothetical* one. A follow-up experiment was conducted to specifically explore the relative power of implied and actual co-witness presence and again it was found that participants were more likely to incorporate the erroneous responses of an actual confederate on a recognition test relative to those of a virtual confederate. Thus our own results and

those of Meade and Roediger's (2002) show that it is not just misinformation per se that affects memory, but also how it is encountered.

Before turning to our age-related findings, we would like to emphasise one last point regarding the potency of misinformation encountered via discussion with a co-witness. Our analysis of the changes versus additions from Recall One to Two revealed that participants were significantly more likely to change a response when the misinformation had been encountered from their confederate, as opposed to being read. We would argue that changes in response from Recall One to Two represent a more powerful demonstration of memory conformity per se than response additions, because the latter could reflect forgetting of specific details that would bring the misinformation into dispute. The fact that more changes were made in the biased-confederate condition supports our hypothesis that misinformation presented socially has a greater influence on memory reports.

As mentioned in the introduction, Dixon (1996) and Thompson and Conway (2001) have both found evidence for 'collaborative expertise' in older adults, where memory collaboration can provide cognitive support that is able to compensate for an individual's age-related memory losses. Accordingly, we had hypothesized that the use of joint recall as a compensatory mechanism might make older adults more susceptible than the young to the influence of socially encountered misinformation. Although we did find that the number of reported misinformation items was highest, for older adults, in the biased-confederate condition, the increase did not exceed that found for younger adults.

Although all groups (young, old, biased, not biased etc) improved in Recall Two compared to Recall One (i.e. suggesting hypermnesia, see Roediger & Payne, 1985), we also found that older adults particularly benefited from being able to

discuss the event with the confederate. That is, the memory performance of older adults improved following a discussion of the event, despite the fact that the confederate did not impart any information that could be used to answer the neutral questions in the recall test. In fact, older adult performance in the biased confederate condition improved to the extent that it did not differ from the younger adult group. Thus, the act of collaboration appears to provide older adults with support, enabling their performance to improve (see also Craik, Byrd & Swanson, 1987, for a discussion of the benefits of environmental support for older adults).

The age effects also indicated that susceptibility to misinformation does not seem to bear a simple relationship to memory for the original event (see Gabbert et al, 2003, for similar findings). For example, older adults were *less* likely to report the misinformation even though their memory for the event was poorer in comparison with younger adults. Conversely, younger adults were *more* likely to report misinformation despite being significantly more accurate about event details overall. Why were younger adults more influenced by the misinformation than older adults? The notion of peer pressure may be apt, i.e. that the younger adults may have a particular concern with being accepted and in agreement with other persons, a factor that seems to be relatively strong in this age group compared to older adults (see Borsari & Carey, 2001, for a review of why young adults succumb to peer pressure).

Finally, we began the introduction to this paper by noting that there are various, sometimes competing, theoretical accounts of the misinformation effect. We do not know, at present, whether such accounts alone will be able to provide a satisfying explanation for the incorporation of socially encountered misinformation into eyewitness reports. We cannot rule out the possibility that discussion with a co-witness could distort or overwrite specific elements of memory for the original event

(see Belli, Lindsay, Gales, & McCarthy, 1994; Loftus & Hoffman, 1989; Loftus, Miller, & Burns, 1978; Wright & Stroud, 1998). It is also possible that participants could have confused the context in which the original and post-event misinformation were presented, resulting in 'source' confusion (Johnson, Hashtroudi & Lindsay, 1993; Zaragosa & Lane, 1994).

Perhaps conformity between eyewitnesses is simply a result of memory distortions or mechanisms such as those just described, but the point is moot until much further work has been carried out. It would be informative in this regard to know if the same factors that influence the strength of socially encountered misinformation effect the strength of misinformation from non-social sources. Although various factors affecting the misinformation effect have been identified in prior studies (e.g. study-test delay interval, distinctiveness, exposure duration and trace-strength manipulations), the extent to which co-witnesses can disregard, i.e. exclude, socially (versus non-socially) encountered misinformation would be worth exploring. This could be achieved by giving witnesses source-monitoring instructions, warning them (at test) that the misinformation was in fact errant, and should be withheld or indicated as such in their recall (see Wright, 1993). This seems, to us, to be a worthwhile goal also from the forensic point of view, where the issue of how to distinguish between true and false corroboration between witness reports has considerable weight.

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Appendix One

1. Did the employee open the till on his left or right first?
2. Which of the robbers entered the shop first?
3. What time of day did the robbery occur?
4. What was the customer wearing?
5. What was the employee doing at the beginning of the film?
6. What direction did the robbers run off in after leaving the shop?
7. How did the robbers disguise their faces?
8. How would you describe the robber's accents?
9. What was the main robber wearing?
10. What did the robbers do before leaving the shop?
11. What type of bag was handed to the employee?
12. Did the robber hand the bag to the employee with his left or right hand?
13. Who had the bag containing the money when the robbers left the shop?
14. Was there a CCTV camera in the store?
15. How was the customer attacked?
16. How did the main robber get the employee to hurry up?
17. What did the robber by the door have in his hand?
18. How would you describe the employee's hairstyle?
19. What was thrown by the main robber?
20. What colour hair did the robber by the door have?

Question	Pre-manipulation response	Post-manipulation response
What was the employee doing at the beginning of the film?	"Working behind the till"	"Stacking shelves"
Who had the bag containing the money when the robbers left the shop?	*No answer provided*	"The main robber handed the bag to the robber by the door"

Table 1: Examples of pre and post manipulation responses

	Control Condition	Biased-Narrative	Biased-Confederate
Young Adults	1.5% (5.8%)	36.7% (31.3%)	54.2% (32.4%)
Older Adults	0% (0%)	26.5% (28.2%)	33.7% (30.7%)

Table 2: Mean percentage of misinformation reported by age group and condition (standard deviations in parentheses).

	Recall One			Recall Two		
	Control	Biased Narrative	Biased Confed	Control	Biased Narrative	Biased Confed
Young adults	10.19 (2.07)	9.86 (2.17)	10.08 (1.89)	11.44 (1.96)	10.92 (1.90)	11.33 (2.07)
Older adults	7.65 (2.30)	7.41 (2.02)	8.15 (2.49)	8.35 (2.24)	7.94 (1.77)	10.44 (2.36)

Table 3: Mean number of accurate details (out of 16) reported in Recall One and Two, broken down by age and experimental condition (standard deviations in parentheses).