

Memory Conformity Between Eyewitnesses

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More than a century of psychology research has shown that memory is fallible. People's memory can be influenced by information encountered after an incident has been witnessed—so-called postevent information, or PEI.¹ In everyday life, one of the most common ways to encounter PEI is when individuals who have shared the same experience discuss this with one another. In the case of witnessing a crime, individuals might be particularly motivated to discuss what happened, and who was involved, because of the significance of the event. The PEI encountered during this discussion with a co-witness might be largely consistent with one's own memories of the event. However, some details may differ either because one witness has remembered something differently, has paid attention to different details, or has simply made an honest mistake in his or her own account. A common finding within eyewitness-memory literature is that exposure to PEI that is inconsistent with a person's own memory can affect the ability to subsequently report details of the originally encoded event.²

The following two examples show how the memory report of one witness may influence that of another witness during a discussion. Witness evidence in the Oklahoma bombing incident of 1995 came from employees working at Elliot's Body Shop where the perpetrator, Timothy McVeigh, rented the truck used in the bombing. McVeigh was arrested for the mass murder but there was a question as to who, if anyone, was his accomplice when he rented the truck. One of the three employees working in the shop that day claimed, with some confidence, that McVeigh was accompanied by a second man. Initially, the other witnesses gave no description of this alleged accomplice. However, later they too claimed to remember details of a second person. This led to a costly police hunt for a person the FBI now believes does not exist. Several months later, the witness who had confidently indicated the presence of an accomplice acknowledged that he may have been recalling another customer. So, why did all three witnesses provide

a description of an accomplice when McVeigh had actually entered the shop alone? It is likely that the confident witness unintentionally influenced the others, leading them to report that they also recalled a second man.³ Indeed, the witnesses admitted in testimony that they had discussed their memories before being questioned by investigators.⁴

The more recent high-profile murder investigation of the Swedish foreign minister, Anna Lindh, in September 2003, provides a second example. Witnesses were all placed together in a small room to prevent them leaving the scene of the crime before being interviewed. The witnesses later admitted to discussing the event with one another while in the room.⁵ During these discussions, one witness mentioned to the others present that the perpetrator wore a camouflage-patterned military jacket. As a result, a number of these witnesses subsequently reported this clothing detail to the investigating officers. This description was used in an immediate search for the perpetrator in the surrounding area, and also featured in the release of a national police alert. This detail, however, was incorrect, resulting in wasted police time and resources. Footage from surveillance cameras showed that the killer, Mijailo Mijailovic, was in fact wearing a grey hooded sweatshirt. Given that witnesses were free to discuss the incident with each other at some length, it is reasonable to assume that co-witness influence was the main source of error in the immediate stages of this investigation.⁶

These examples highlight that when witnesses discuss their memories, their accounts of the witnessed event can become similar, and hence, seemingly corroborative. This phenomenon is referred to as "memory conformity."⁷ When memory conformity occurs in a formal investigation, whether criminal or civil, there can be serious and costly implications for any subsequent investigations. Of course, not all PEI shared between witnesses will be misleading. There is the potential for witnesses to share accurate PEI, which can have positive effects on memory.⁸ Furthermore, collaborative remembering

Footnotes

1. E.g., Fiona Gabbert et al., *Memory Conformity: Can Eyewitnesses Influence Each Other's Memories for an Event?*, 17 APPLIED COGNITIVE PSYCHOL. 533 (2003).
2. See Michael. S. Ayers & Lynne. M. Reder, *A Theoretical Review of the Misinformation Effect: Predictions from an Activation-Based Memory Model*, 5 PSYCHONOMIC BULL. & REV. 1-21 (1998); Jacqueline E. Pickrell et al., *The Misinformation Effect*, COGNITIVE ILLUSIONS: A HANDBOOK ON FALLACIES AND BIASES IN THINKING, JUDGMENT AND MEMORY 345 (Rütiger F. Pohl ed., 2004).
3. Amina Memon & Daniel B. Wright, *Eyewitness Testimony and the Oklahoma Bombing*, 12 THE PSYCHOLOGIST 292 (1999); D.L. SCHACTER, *THE SEVEN SINS OF MEMORY (HOW THE MIND FORGETS AND REMEMBERS)* (2001).
4. Memon & Wright, *supra* note 3.
5. PärAnders Granhag, Karl Ask & Anna Rebellius, "I Saw the Man Who Killed Anna Lindh," A Case Study of Eyewitness Descriptions, 15TH EUROPEAN CONFERENCE ON PSYCHOLOGY & LAW, Vilnius, Lithuania (June 2005).
6. *Id.*
7. E.g., Daniel B. Wright et al., *Memory Conformity: Exploring Misinformation Effects When Presented by Another Person*, 91 BRIT. J. PSYCHOL. 189 (2000).
8. See Helen M. Paterson & Richard I. Kemp, *Comparing Methods of Encountering Post-Event Information: The Power of Co-Witness Suggestion*, 20 APPLIED COGNITIVE PSYCHOL. 1083 (2006).

can help people remember details that would otherwise have been forgotten. However, the notion that group members can “cross-cue” one another to produce new memories that would not have been generated if remembering alone is not supported by research,⁹ even when attempts are made to increase the opportunity for cross-cuing.¹⁰ In contrast, a large amount of research has shown that people are easily influenced by misleading PEI encountered from another person.¹¹

Criminal events are often witnessed by more than one person,¹² and discussion between witnesses is common.¹³ For example, an Australian survey of students who had witnessed a crime found that where multiple witnesses had been present, 86% of respondents admitted to discussing the event with a co-witness.¹⁴ More recently, a U.K. survey of eyewitnesses who were interviewed after viewing a lineup revealed that the majority had witnessed the crime with other people present, and more than half of these people had discussed the event with a co-witness.¹⁵ Although it is best practice for the police to encourage witnesses to the same event not to discuss their memories for fear of evidence contamination, it is likely that many witnesses do enter into discussions about the event both before the police arrive and afterward, even if police warned them not to do so. In such circumstances investigators and jurors may subsequently attach a false corroborative value to any consistencies between witness statements obtained or any evidence given in court thereafter, when the evidence may be contaminated if the witnesses had discussed their memories before being interviewed by the police.

EXPERIMENTAL RESEARCH ON MEMORY CONFORMITY

There are different approaches to studying memory.¹⁶ As cognitive psychologists our approach is to understand the processes that can lead to an individual reporting an event in a certain way, such as reporting what another person has said when asked to give an independent report. We try to isolate a small number of factors and then vary those factors systematically to see how they affect response. This study is well suited for the legal arena because the interest in this context is the reliability of individual eyewitnesses and the factors that can affect that reliability.

The basic memory-conformity procedure is to show a small

group of people (often just a pair) some set of stimuli or an event, have the people interact with each other, and then individually test each person about what he or she remembers. One critical decision memory-conformity researchers have to make is whether to have the PEI delivered from one participant to another, or to have a confederate (a person working for the researcher but pretending to be a participant) deliver the PEI. When participants are

presenting PEI to each other, it is common to show them slightly different materials so that disagreements are likely. Consider one study that used this approach:¹⁷ Two versions of a crime event were made, each containing the same sequence of events but filmed from different angles to simulate different witness vantage points. The different viewing angles allowed the participants to see two different critical features of the event. After viewing, participants had an opportunity to remember the event together, where the critical features were often discussed. An individual memory test followed and 71% of witnesses who had discussed the event reported at least one of the two erroneous critical details acquired from their co-witness.

Using a confederate has some advantages over other methods because well-trained confederates can impart the same PEI, in the same manner, to all participants during the course of a discussion. For example, Gabbert et al. used a confederate to examine whether participants are more suggestible when post-event misinformation is encountered socially via a face-to-face discussion rather than when it is encountered via non-social means.¹⁸ Participants viewed a simulated crime event and were later exposed to four items of misleading PEI about the event. This came within the context of a discussion with a confederate whom they believed to be a fellow participant, or within a written narrative allegedly written by a previous participant. The confederate was trained to disclose the same items of correct and misleading PEI that were present in the

“[A] large amount of research has shown that people are easily influenced by misleading [postevent] information encountered from another person.”

9. Peter R. Meudell et al., *Are Two Heads Better than One?: Experimental Investigations of the Social Facilitation of Memory*, 6 APPLIED COGNITIVE PSYCHOL. 525 (1992).
10. Peter R. Meudell et al., *Collaboration in Recall: Do Pairs of People Cross-Cue Each Other to Produce New Memories?*, 48A Q.J EXPERIMENTAL PSYCHOL. 141 (1995).
11. See Gabbert et al, *supra* note 1; Fiona Gabbert et al., *Say It to My Face: Examining the Effects of Socially Encountered Misinformation*, 9 LEGAL & CRIMINOLOGICAL PSYCHOL. 215 (2004); Fiona Gabbert et al., *Memory Conformity: Disentangling the Steps toward Influence During a Discussion*, 13 PSYCHONOMIC BULL. & REV. 480 (2006); Matthew B. Reysen, *The Effects of Conformity on Recognition Judgments*, 13 MEMORY & COGNITION 87 (2005); Dana M. Schneider & Michael J. Watkins, *Response Conformity in Recognition Testing*, 3 PSYCHONOMIC BULL. & REV. 481 (1996); Wright et al., *supra* note 7.

12. See Tim Valentine et al., *Characteristics of Eyewitness Identification that Predict the Outcome of Real Lineups*, 17 APPLIED COGNITIVE PSYCHOL. 969 (2003); Daniel B. Wright & Anne T. McDaid, *Comparing System and Estimator Variables Using Data from Real Line-Ups*, 10 APPLIED COGNITIVE PSYCHOL. 75 (1996).
13. See Paterson & Kemp, *supra* note 8; Daniel B. Wright et al., *Changing the Criterion for Memory Conformity in Free Recall and Recognition*, 16 MEMORY 137 (2008).
14. Paterson & Kemp, *supra* note 8.
15. Elin M. Skagerberg & Daniel B. Wright, *The Prevalence of Co-Witnesses and Co-Witness Discussions in Real Eyewitnesses*, 14 PSYCHOL. CRIME & L. 513 (2008).
16. See SUZANNE NALBANTIAN ET AL., THE MEMORY PROCESS (2010).
17. Gabbert et al, *supra* note 1.
18. Gabbert et al., *supra* note 11.

“Figure 1 shows a model of memory conformity with two routes for reporting what another person has said rather than reporting what one remembers.”

misleading narrative. In a final memory test about the crime event, participants who had encountered the misleading PEI socially were more likely to report this misinformation than those who had encountered the same misinformation while reading the narrative.

Irrespective of the methods utilized, the focus of memory-conformity research is on understanding why people report information that has merely been suggested to

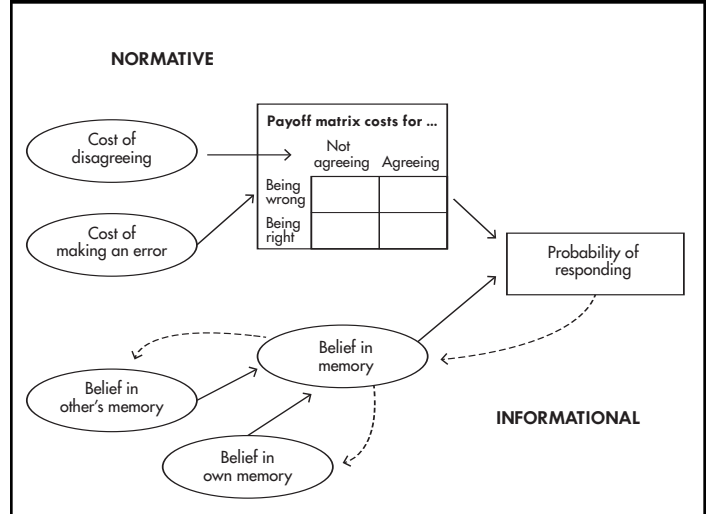
them, thus allowing for possible predictions to be made as to when these effects are most likely to occur. Furthermore, this area of research also provides a grounding for predicting whether certain people are particularly likely to conform to another witness’s memory rather than relying on their own.

Figure 1 shows a model of memory conformity with two routes for reporting what another person has said rather than reporting what one remembers.¹⁹ The top, normative route involves the person comparing the cost of disagreeing with the cost of making an error. People may agree with another person because of normative pressures to conform even when they believe the response is in error. Normative motivations to conform often reflect an individual’s need for social approval and manifest as public declarations of agreement despite private disagreement. Thus, people might outwardly agree with another person’s recollected version of events when privately they do not believe that is what actually happened.²⁰ Normative influence can be shown by people reporting the same thing as somebody else when the other person is present, but reverting to their own belief when questioned privately.²¹ Normative influences are strongest when the costs of disagreeing are high. Under these conditions, participants engaging in collaborative retrieval may appear to be in agreement with each other when in fact this behavior reveals little about social influences on memory and more about motivations and behaviors to increase social acceptance and to appear more likeable.²² For example, Baron, Vandello, and Brunzman conducted an eyewitness-identification study and found that participants knowingly gave an incorrect response so as not to disagree with a confederate when they were told the results were of little importance (that

their responses would be used as pilot data) but were less likely to conform when they were told the results were important (that their responses would be used by the police and courts).²³

FIGURE 1. A MODEL OF MEMORY CONFORMITY.

ADAPTED FROM DANIEL B. WRIGHT ET AL., *SOCIAL ANXIETY MODERATES MEMORY CONFORMITY IN ADOLESCENTS*, 24 *APPLIED COGNITIVE PSYCHOL.* 1034 (2010).



The bottom, or informational, route in Figure 1 involves the witness comparing how accurate they think they are with how accurate they think the co-witness is. The person must decide which source of information is more trustworthy. Informational motivations to conform are reflected in a person’s decision to accept and later report PEI encountered from a co-witness if it is believed to be correct. This is particularly likely in situations where an individual doubts the accuracy of his or her own memory or when the information encountered from another individual convinces them that his or her initial judgment might be wrong, thus supporting Festinger’s²⁴ assertion that the need to feel certainty or confidence in one’s beliefs drives much social influence.²⁵

Several research laboratories have investigated how normative and informational influences affect the ways in which people respond to memory probes. Most of the research is done by altering one of the factors shown in the ellipses on the left of Figure 1 (e.g., the cost of making an error). Altering each of these produces systematic effects on how people respond. Below we review some of these studies.

19. Daniel B. Wright et al., *Social Anxiety Moderates Memory Conformity in Adolescents*, 24 *APPLIED COGNITIVE PSYCHOL.* 1034 (2010).

20. See Robert B. Cialdini & Noah J. Goldstein, *Social Influence: Compliance and Conformity*, 55 *ANN. REV. PSYCHOL.* 591 (2004); Morton Deutsch & Harold G. Gerard, *A Study of Normative and Informational Social Influence upon Individual Judgement*, 59 *J. ABNORMAL SOC. PSYCHOL.* 204 (1955).

21. See Kevin Allan & Fiona Gabbert, *I Still Think It Was a Banana: Memorable “Lies” and Forgettable “Truths,”* 127 *ACTA PSYCHOLOGICA* 299 (2008); Schneider & Watkins, *supra* note 11; John S. Shaw et al., *Co-Witness Information Can Have Immediate Effects on Eyewitness Memory Reports*, 21 *LAW & HUM. BEHAV.* 503 (1997).

22. See Henri Tajfel & John C. Turner, *The Social Identity Theory of Inter-Group Behaviour*, in *PSYCHOLOGY OF INTER-GROUP RELATIONS* 7 (Stephen Worchel & William G. Austin eds., 2d ed., 1986).

23. Robert S. Baron, Joseph A. Vandello, & Bethany Brunzman, *The Forgotten Variable in Conformity Research: Impact of Task Importance on Social Influence*, 71 *J. PERSONALITY & SOC. PSYCHOL.* 915 (1996).

24. Leon Festinger, *A Theory of Social Comparison Processes*, 7 *HUM. REL.* 117 (1954).

25. See Curtis D. Hardin & E. Tory Higgins, *Shared Reality: How Social Verification Makes the Subjective Objective*, in *HANDBOOK OF MOTIVATION AND COGNITION: THE INTERPERSONAL CONTEXT* 28 (E. Tory Higgins & Richard M. Sorrentino eds., vol. 3, 1996).

Acquaintance versus Stranger Studies

When a crime occurs there are often multiple witnesses. Sometimes these witnesses are acquaintances, and sometimes they are strangers. An important applied question is whether the relationship between co-witnesses affects how susceptible they are to each other's influence. We expect that there is a larger cost of disagreeing when one knows the other person. It may also be that people think their acquaintances have better memories than strangers. Thus, from Figure 1 we predict that acquaintances should be more susceptible to memory-conformity effects than strangers, and two studies offer support in respect of these predictions. Hope, Ost, Gabbert, Healey, and Lenton found that previously acquainted witnesses, in this case pairs of friends and romantic partners, were more likely to report information obtained from their co-witness than were previously unacquainted strangers.²⁶ French, Garry, and Mori also found previously acquainted participants (romantic partners) showed an increased susceptibility to memory conformity than strangers.²⁷

Thus, the more prepared we are to accept another person's judgments and value his or her opinion, the more we become subject to his or her influence.²⁸ From an applied perspective the difference between acquaintances and strangers is likely to be even larger because acquaintances are more likely to engage in conversations in the days after viewing a crime. Thus, it is important for the police to get independent testimony from acquaintances as soon as possible after the event. In court it is important that the types of relationships held among different witnesses are considered.

Beliefs in Own and Other Person's Memory

Figure 1 shows that a person's final belief about a memory can be reached by comparing the belief he or she has in his or her own memory with the belief he or she has in another person's memory. How this combination occurs is complex, but the basic findings are that stronger beliefs in one's own memory inoculate a person from memory-conformity effects, and stronger beliefs in another person's memory can increase the influence of that person's memory report. Supporting this, research has found that the overt confidence with which individuals make their assertions to each other can operate systematically as a cue that promotes conformity.²⁹ This explains why the confident memory of an accomplice in the Oklahoma bombing case quickly spread to the reports given by the co-workers. For example, Wright et al. investigated memory conformity between co-witnesses by showing pairs of participants a storybook containing 21 color pictures depicting a crime taking place.³⁰ The storybooks were identical, except in one the

culprit had an accomplice and in one there was no accomplice. Participants were then asked true/false recognition questions about what they had seen and rated their confidence after each question. Following this they discussed their memories about the sequence of events, including whether there was an accomplice, and then answered the same questions. While the people within each pair initially disagreed about there being an accomplice, after discussing the event most of the pairs were in agreement. The person in the pair who was initially more confident tended to persuade the other person in the pair. More recently Allan and Gabbert systematically manipulated the confidence with which accurate and misleading PEI was delivered to participants.³¹ They found further support that a person's confidence in what he or she has to say can alter the immediate persuasiveness of its content, and that people make use of their perceptions of confidence as a cue when determining who is most likely to be correct.³²

Tendencies to conform can also be affected by manipulating the perceptions of each individual regarding the relative knowledge each has of stimuli they encoded together. Gabbert, Memon, and Wright showed pairs of people a series of complex drawings, which they believed were exactly the same, but in fact had some slight differences.³³ The pair was told that one of them had viewed slides for twice the length of time as the other, though actual encoding duration was the same. Participants who believed they had seen the slides for less time than their partner were more likely to conform to their partner's memory for items than those who thought they had viewed the slides longer. Thus, individuals who believe they have an inferior memory quality to others are more likely to become influenced by, and subsequently report, items of errant PEI encountered from another person.

An important application of this is that the roles witnesses have will often differ, and sometimes these roles will determine how influential a witness is when remembering an event together with co-witnesses. For example, there are differences between a bystander or observer and a witness who interacts with a criminal. Carlucci, Kieckhafer, Schwartz, Villalba, and Wright showed bystanders can be more susceptible to memory-conformity effects than people who interact with a target person.³⁴ They had a male confederate approach a group of people on a crowded beach in South Florida and ask one of the people for the time. The confederate walked out of view, and a

“[W]e predict that acquaintances should be more susceptible to memory-conformity effects than strangers....”

26. Lorraine Hope et al., “With a Little Help from My Friends...”: The Role of Co-Witness Relationship in Susceptibility to Misinformation, 127 ACTA PSYCHOLOGICA 476 (2008).

27. Lauren French et al., The MORI Techniques Produces Memory Conformity in Western Subjects, 22 APPLIED COGNITIVE PSYCHOL. 431 (2007).

28. See LEON FESTINGER, A THEORY OF COGNITIVE DISSONANCE (1957).

29. Allan & Gabbert, *supra* note 21; Schneider & Watkins, *supra* note 11; Wright et al., *supra* note 7.

30. Wright et al., *supra* note 7.

31. Allan & Gabbert, *supra* note 21.

32. See Schneider & Watkins, *supra* note 11.

33. Fiona Gabbert et al., I Saw It for Longer Than You: The Relationship Between Encoding Duration and Memory Conformity, 124 ACTA PSYCHOLOGICA 319 (2007).

34. Marianna Carlucci et al., The South Beach Study: Bystanders' Memories are More Malleable, 25 APPLIED COGNITIVE PSYCHOL. 562 (2011).

“[B]elieving something is correct... can facilitate the creation of a false memory.”

research assistant approached either the person who interacted with the confederate or another person in the group. The research assistant showed the person a six-person target-absent lineup. After that person had made an identification, the research assistant turned to another person and asked that

she or he also make an identification. When responding second, the bystander was more than twice as likely to conform than the person who had previously interacted with the confederate. From a theoretical perspective, this suggests that people believe bystanders have worse memories than those directly involved with an interaction. From an applied perspective, it is important for investigators to consider the role of all the witnesses and to take this into account when it is suspected that the witnesses may have discussed the crime.

Source Credibility

Further support for informational influence underlying some of the observed memory-conformity effects comes from research showing that the size of the memory-conformity effect is moderated by person-perception factors, such as perceived source credibility. For example, Kwong See, Hoffman, and Wood showed participants (young adults) a slide show depicting a theft and then presented them with a narrative summarizing the incident.³⁵ To manipulate source credibility, this narrative was either introduced as being an account of the event as remembered by a 28-year-old or an 82-year-old. In fact, the narratives were the same, each including four items of misleading PEI. Because the young adult participants trusted young people's memories more than the memories of older adults, from Figure 1 we would predict that participants would be more influenced by the young-adult reports. This is what the researchers found. Participants were more likely to coalesce with the younger adult's memories than with those of the older adult. Skagerberg and Wright found similar results.³⁶ Participants were more influenced if the co-witness was a fellow student or a police officer than if the co-witness was a child. These results have applied significance. Some groups of people will be more influential than others. If a police officer at the scene of a crime confidently states that “a red car passed through the stop sign,” this will have a larger impact on co-wit-

nesses than if a young child gave the same statement.

In summary, memory-conformity effects are often driven by informational influences. People conform to another person's version of events when that person is perceived as more knowledgeable, more confident, and/or more credible. Because of this, conformity effects driven by informational influence may persist over a delay,³⁷ and people may report the suggested information in private as well as public.³⁸ Even in situations where it is vital to provide an accurate and unbiased opinion, research suggests that individuals who are uncertain are likely to conform to another person's decision or memories.³⁹

Source Misattributions

Another explanation for the memory-conformity effect is that people have made a source misattribution where a memory from one source (e.g., a discussion with a co-witness) is mistakenly misattributed to another source (e.g., the witnessed event), and thus reported as if it is a personal memory. In other words, it is possible for people to construct a (false) memory based on what the other person has said. This is not illustrated in Figure 1 because we believe the processes and time-course are different to that of normative or informational routes to memory conformity. However, believing something is correct (the informational route) can facilitate the creation of a false memory.⁴⁰

The source-monitoring framework describes the judgment processes that individuals employ to accurately identify the source of a memory, as well as specifying factors that are likely to promote source-monitoring errors.⁴¹ For example, according to the source-monitoring framework, our memories contain various characteristics that provide clues as to their origin. Memories from different sources tend to differ on average in the quantity and quality of the characteristics associated with them. Individuals use these differences in memory characteristics as heuristics to attribute their memories to a particular source. However, there is no single aspect of our memories that specifies the true source without fail, and, as a consequence, source misattributions can occur.⁴²

Research and theory on the accuracy of source monitoring has shown that source-confusion errors increase when there is an overlap in the memory characteristics from two different sources.⁴³ This finding is particularly relevant, as there is a large amount of contextual overlap between the encoding phase and the misinformation phase within memory-conformity experiments. Both phases of the experiment concern the

35. Sheree T. Kwong See et al., *Perceptions of an Elderly Eyewitness: Is the Older Eyewitness Believable?*, 16 *PSYCHOL. & AGING* 346 (2001).

36. Elin M. Skagerberg & Daniel B. Wright, *Susceptibility to Post Identification Feedback Is Affected by Source Credibility*, 23 *APPLIED COGNITIVE PSYCHOL.* 506 (2009).

37. See Allan & Gabbert, *supra* note 21; Helen M. Paterson et al., *Co-Witnesses, Confederates, and Conformity: Effects of Discussion and Delay on Eyewitness Memory*, 16, *PSYCHIATRY, PSYCHOL. & L.* 112 (2009); Reysen, *supra* note 11.

38. See Wright et al., *supra* note 13.

39. See Baron et al., *supra* note 23; Andrew L. Betz et al., *Shared Realities: Social Influence and Stimulus Memory*, 14 *SOC. COGNITION*

113 (1996); Wright et al., *supra* note 7.

40. See Alan Scoboria et al., *Plausibility and Belief in Autobiographical Memory*, 18 *APPLIED COGNITIVE PSYCHOL.* 791 (2004).

41. See M.K. Johnson et al., *Source Monitoring*, 114 *PSYCHOL. BULL.* 3 (1993).

42. *Id.*

43. Linda A. Henkel & Nancy Franklin, *Reality Monitoring of Physically Similar and Conceptually Related Objects*, 26 *MEMORY & COGNITION* 659 (1998); Roslyn Markham & Lisa Hynes, *The Effect of Vividness of Imagery on Reality Monitoring*, 17 *J. MENTAL IMAGERY* 159 (1993).

witnessed stimuli and thus overlap in terms of content. Furthermore, both phases (usually) take place within a limited time frame and in the same experimental environment. In real life, a similar amount of contextual overlap might be expected. Co-witnesses are likely to talk about what they have just seen (content overlap); they are likely to do this immediately after the crime event (temporal overlap); and it is likely that this discussion occurs at the scene, while waiting for the police to arrive, rather than at a different location (environmental overlap). The consequences of source-monitoring errors can be very serious in a criminal investigation, as they have the potential to lead to inaccurate testimony, biased evidence, and false corroboration between witnesses.

Gabbert et al. examined the extent to which source confusions are accountable for the memory-conformity effect.⁴⁴ Over the course of the experiment, participants engaged in a series of discussions with a co-witness about details featured in slides. Each member of the pair had in fact viewed slightly different versions of the slides—a manipulation that introduced the potential for them to share items of misleading PEI. Following each discussion, they were asked to provide an individual account of what had been seen. At the end of the experiment a source-monitoring task was administered where participants were asked to review their free-recall responses and to (a) circle the details that they remembered hearing from their co-witness but not actually seeing themselves; (b) leave unmarked the details that they did remember seeing in the pictures; and (c) underline the details for which they could not remember the source. About half of the errantly reported details were correctly categorized as having been encountered in the co-witness discussions; however, about half were incorrectly attributed to having been seen in the original slide presentation.

Similar findings were reported in a study by Paterson et al.⁴⁵ Participants discussed their recollections of a mock crime event with a co-witness who had seen a slightly different version. One week later they were interviewed separately about what they could remember. Following the interview, participants were asked to read through their statements and indicate the source of each item of information reported by attributing it to one of four sources: video only, discussion only, both the video and discussion, or unsure. If participants reported suggested items at test and correctly attributed these to having originated from the co-witness discussion, then the source-monitoring decision was coded as being accurate. However, if suggested items of information that had been reported at test were attributed to (a) the video or (b) the video and discussion, then the source-monitoring decision was coded as being inaccurate. Participants frequently reported that they had seen items of PEI that had in fact only been suggested to them in the co-witness discussion. Accurate source-monitoring judgments were made on only 43% of occasions.

WHAT CAN BE DONE TO PROTECT AGAINST MEMORY CONFORMITY?

Paterson et al. examined whether a warning to disregard PEI encountered from a co-witness was effective in reducing memory conformity.⁴⁶ Participants viewed a mock crime event that was either the same or slightly different to the event viewed by their partner. Following this, they discussed their memories together. One week later, half of the participants from each condition were given a warning that they may have been exposed to misleading PEI from the co-witness with whom they had discussed the event. Participants were then individually interviewed about what they had seen in the event. Paterson et al. found that 28% of participants who received a warning reported at least one piece of misinformation in comparison to 32% of those who did not receive a warning.⁴⁷ Thus, warning participants about misinformation one week after exposure did not appear to substantially reduce the memory-conformity effect.

It is known that people forget the source of the information faster than the information itself, so perhaps the warning in Paterson et al.'s study was given too late for the participants to effectively monitor the source of information relating to a crime event and to disregard items of PEI encountered from the co-witness. To investigate this, the researchers ran a second study to explore whether warning participants about potential exposure to misinformation immediately after the co-witness discussion was more effective than giving the warning after a week. A control group received no warning. Once again, researchers found that warning participants that they may have been exposed to misleading PEI from their co-witness did not significantly reduce their susceptibility to memory conformity.

Bodner, Musch, and Azad had more success with warning participants to disregard PEI from a co-witness.⁴⁸ Their warning explicitly asked participants not to report details that they acquired from their secondary source unless they also remembered seeing the details. The warning was given to participants in the same test session as viewing and discussing an event. In contrast to Paterson et al.'s findings,⁴⁹ Bodner et al. found that the warning was effective and sharply reduced the rate of reporting non-witnessed details. However, even with such minimal delay between the co-witness discussion and the instruction to disregard non-remembered items of PEI, the warnings did not eliminate the memory-conformity effect. Meade and Roediger have also found that warnings can reduce, but not eliminate, the memory-conformity effect.⁵⁰

In sum, research shows that post-warnings to disregard PEI are not always successful because people often do not remem-

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44. Gabbert et al., *supra* note 33.

45. Paterson et al., *supra* note 37.

46. *Id.*

47. *Id.*

48. Glen E. Bodner et al., *Re-Evaluating the Potency of the Memory*

Conformity Effect, 37 *MEMORY & COGNITION* 1069 (2009).

49. Paterson et al., *supra* note 37.

50. Michelle L. Meade & Henry L. Roediger, *Exploration in the Social Contagion of Memory*, 30 *MEMORY & COGNITION* 995 (2002).

“[Research] has shown that memories are malleable and that individuals are vulnerable to conforming to other people’s memory reports.”

ber where they heard information. This is particularly true long after the discussion with co-witnesses. Police investigators and others in the criminal justice system should ask witnesses if they spoke with co-witnesses about the crime.⁵¹ The problem with this is that people may have forgotten if they had engaged in discussions with others, and it is very likely they will have poor memories for what was discussed.

Warnings to disregard PEI will only work if individuals are able to remember the source of the information that they are able to recall. Thus, the differences found between studies that have and have not found warnings to be effective probably reflect differences in the strength of people’s memories caused by encoding quality, the delay between study and test, motivations to remember, etc. Where memory conformity has occurred as a result of a genuine memory distortion, namely, a source confusion, witnesses may be unable to accurately retrieve the source of the information and may claim to remember seeing items of information that have actually been encountered from a co-witness.⁵² That some research has found source judgments can be wrong, even with deliberate consideration, highlights the fact that being able to recall memories does not guarantee their authenticity.

Perhaps trying to *prevent* potentially contaminating interactions and recording memories before any interactions is a better approach than using post-event warnings. Police should separate witnesses as much as possible and encourage them not to discuss the crime. An alternative approach is to gather memories from as many witnesses as possible before contamination can occur (and also before memories have had much time to weaken).

A novel way to obtain information from witnesses quickly, and strengthen memory in the process, is to ask witnesses to complete the “Self-Administered Interview” as soon after a witnessed incident as possible.⁵³ The Self-Administered Interview, or SAI, is a recall tool, currently in booklet form, designed to obtain high-quality information from witnesses quickly and efficiently at the scene of an incident or shortly afterwards. It contains information about what is expected of the witness,

instructions to facilitate the use of retrieval techniques, and questions prompting the witness to disclose what happened during the event and who was involved. The SAI is a generic response tool in that it is suitable for obtaining evidence about a wide range of different incidents. It is currently in operational use by some police forces in the U.K.

During development and early testing of the SAI, mock witnesses, comprising a sample of community volunteers, viewed a simulated event and were required to report as much as they could about what they had seen.⁵⁴ Witnesses who completed the SAI tool reported 42% more correct details than participants who were simply asked to report what they had seen. In a second study, mock witnesses who completed the SAI recalled approximately 30% more correct details after one week than did witnesses who did not have an early recall opportunity. These results suggest that the SAI facilitates the retrieval and reporting of accurate information, as well as strengthening and protecting memory for a witnessed incident such that forgetting is minimized.

Recent research by Gabbert and colleagues examined the hypothesis that because the SAI seemingly works by strengthening the original episodic memory (the “Belief in own memory” from Figure 1), mock witnesses who complete an SAI shortly after viewing a simulated crime event will be better able to detect and resist items of misleading PEI encountered subsequently.⁵⁵ Findings were in line with predicted results.⁵⁶ Research by Geiselman, Fisher, Cohen, Holland, and Surtes, as well as Memon, Zaragoza, Clifford, and Kidd have also shown that participants are better able to be vigilant against discrepancies if their memory for a target event is strengthened.⁵⁷

SUMMARY

It is crucial to gain firsthand reports from witnesses during any investigation. However, the research presented here has shown that memories are malleable and that individuals are vulnerable to conforming to other people’s memory reports. People frequently report items at test that they have encountered during a discussion with a co-witness rather than perceived themselves. Real-life cases highlight the serious consequences of memory conformity occurring in the context of a forensic investigation. Research therefore continues to use and to refine methods that allow a controlled examination of the effects of naturalistic interactions on subsequent memory reports. Factors that increase, decrease, and possibly eliminate the longer-term effects of memory conformity are investigated.

51. BRITISH PSYCHOLOGICAL SOCIETY, GUIDELINES ON MEMORY AND THE LAW: RECOMMENDATIONS FROM THE SCIENTIFIC STUDY OF HUMAN MEMORY (2008).

52. See Gabbert et al., *supra* note 33; Paterson et al., *supra* note 37.

53. Fiona Gabbert et al., *Protecting Eyewitness Evidence: Examining the Efficacy of a Self-Administered Interview Tool*, 33 LAW & HUM. BEHAV. 298 (2009).

54. See Fiona Gabbert, Lorraine Hope, Ronald P. Fisher & Kat Jamieson, *Protecting Eyewitness Evidence at the Scene of a Crime: Can a Self-Administered Interview Protect Against Susceptibility to Misinformation?*, INT’L INTERVIEWING RES. GROUP, Teesside, UK (April 2009).

55. See Elizabeth F. Loftus et al., *Who Remembers Best: Individual*

Differences in Memory for Events that Occurred in a Science Museum, 6 APPLIED COGNITIVE PSYCHOL. 93 (1992); James P. Tounignant et al., *Discrepancy Detection and Vulnerability to Misleading Post-Event Information*, 14 MEMORY & COGNITION 329 (1986).

56. Gabbert et al., *supra* note 54; Fiona Gabbert et al., *Protecting against Susceptibility to Misinformation with the Use of a Self-Administered Interview*. APPLIED COGNITIVE PSYCHOL. (in press).

57. R. Edward Geiselman et al., *Eyewitness Responses to Leading and Misleading Questions Under the Cognitive Interview*, 14 J. POLICE SCI. & ADMIN. 31 (1986); Amina Memon et al., *Inoculation or Antidote?: The Effects of Cognitive Interview Timing on False Memory for Forcibly Fabricated Events*, 34 LAW & HUM. BEHAV. 105 (2010).

This body of research has revealed that memory conformity occurs most often when individuals are not confident enough in their own memory to notice and to reject discrepant PEI, and when individuals believe that someone else's memory for a witnessed event is more reliable than their own. Police should always ask witnesses if they have discussed the incident with another witness and warn against reporting any information that they do not remember themselves. Warnings to disregard PEI from a co-witness are not always effective; however, interviewing witnesses with minimal delay, using a tool such as the SAI if necessary, may facilitate their ability to differentiate between their own memories and someone else's.



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2015 Annual Conference

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