Memory in Context : Context in Memory
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CHAPTER 9

# Here Today, Gone Tomorrow: The Appearance and Disappearance of Context Effects

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ABSTRACT

Evidence is reviewed examining whether guided memory techniques can improve recollections when subjects have previously received misleading information. A series of three studies are reported which examined the impact of context reinstatement on the recall of inaccurately described details. Overall, these three studies suggested that guided memory could sometimes facilitate retrieval in the face of misleading information but the effects were rather fragile and unpredictable.

For many years we have been studying techniques for making memory worse. We have assaulted memory by making subjects feel stressed (Loftus and Burns, 1982), by exposing subjects to erroneous post-event information (Greene, Flynn and Loftus, 1982; Schooler, Gerhard and Loftus, 1986), and by interrogating subjects with leading questions (Loftus, 1979). It was natural that at some point we would want to stop and think instead about ways of improving memory. This interest was fueled by a call from a leading law firm in our city requesting some help with a problem. It seems that the only copy of an important medical X-ray had been sent to the firm by mail. It was critical because it provided proof of the cause of death of a party in litigation. It disappeared, and the lawyers were desperate to find it. A secretary was the last person to have seen the X-ray. Was there anything we could do, the head of the firm asked, to help her remember where she may have put the X-ray?

One of the most promising approaches for improving memory to appear in the recent literature involves a class of techniques loosely tied together by the term 'context reinstatement'. The basic idea underlying these techniques is that a person's ability to remember information is heavily influenced by the relation between the storage of that information and the retrieval context (e.g. Smith, Glenberg and Bjork, 1978; Thomson, 1972; Tulving and Thomson, 1973).

In the domain of memory for natural events, a number of studies have attempted to reinstate event context at the time of retrieval, and superior memory performance has resulted. Malpass and Devine (1981), for example, used a technique for reinstating context called 'guided memory'. Their subjects viewed a staged vandalism and were interviewed five months later. Some of the subjects were reminded of the vandalism in a detailed guided memory interview in which their feelings, their memory for details of the room, and their initial reactions were elicited. Following this guided memory manipulation, subjects tried to identify the vandal. Compared to control subjects, those whose memory had been guided were more accurate.

Another successful demonstration of the power of context-reinstatement was reported by Krafka and Penrod (1985). Store clerks served as subjects and were exposed to an 'unusual' interaction with a 'customer'. Two or 24 hours later they tried to identify the customer from a photo-array. Context was reinstated by asking the subject mentally to recall the event and by giving physical cues from the event. Compared to control subjects, those who had been exposed to context cues were more accurate. It is these and other results that have led Shapiro and Penrod (1986) to conclude that context-reinstatement is one of the most powerful influences on memory.

Against this promising background, we were anxious to see context-reinstatement at work. In particular, we were interested in determining whether context-reinstatement techniques would also benefit subjects who had been exposed to erroneous post-event information as well as subjects who had not. In fact, Bekerian and Bowers (1983) demonstrated that a type of context could reverse the effects of erroneous post-event information. In this study, subjects saw a series of 24 slides depicting a traffic accident (from Loftus, Miller and Burns, 1978) that included a traffic sign (e.g. a stop sign) as the critical item. Some subjects received misleading information about the sign (e.g. that it was a yield sign). In the test phase, 15 pairs of slides were shown and subjects had to indicate for each pair which slide they had seen originally. Some subjects received the test items in random order while others received the items in the order in which they occurred in the original sequence. A major finding was that subjects who received the sequential ordering, which presumably reinstated the event context, were not influenced by the misinformation.



Despite this observation, subsequent research by Bowers and Bekerian (1984) and by others (Geiselman, Cohen and Surtes, 1985; McCloskey and Zaragoza, 1985) revealed that the conditions under which context can reverse a misinformation effect are at best limited. Geiselman *et al.* used a powerful retrieval mnemonic called the cognitive interview (which involved some context reinstatement) and found it reduced the effects of misinformation, but only minimally. McCloskey and Zaragoza found that the misinformation effect was just as strong in the face of a context reinstatement manipulation as it was without it. Given these mixed results, one goal of our research was to learn more about the conditions, if any, under which context might be sufficiently powerful to circumvent misinformation.

## EXPERIMENT 1

One previously successful technique for improving memory for complex events involved a guided memory manipulation (Malpass and Devine, 1981). This was used in Experiment 1. We predicted that guided memory would enhance recall of information except, perhaps, in the case where misleading post-event information had been given. This expectation was based on the fact that most efforts to undo the misinformation effect have been unsuccessful.

### Method

#### *Subjects*

Subjects were 193 introductory psychology students from the University of Washington who participated for class credit. Subjects were tested in groups of 6–10.

#### *Design and procedure*

The experiment was a 3 × 2 factorial design. On day 1 all subjects viewed a video tape depicting a bank robbery. On day 2, subjects were assigned to one of three different post-event information conditions: misinformation, neutral information, or no information. Subjects were subsequently assigned to one of two context reinstatement conditions; they heard either an auditory tape instructing them to reinstate context, or they heard music.

On day 1 all subjects were met by Experimenter A and escorted to room A. Room A was rich in stimuli (cluttered, posters on wall). Subjects spent 20 min. engaging in an easy filler activity that left them ample time to look around the room. They then viewed a 30 sec. video tape depicting a bank robbery prepared by John Yuille at the University of British Columbia. The

robbery was filmed from behind the counter; the face of the single customer was in full view, however, only the backs of two tellers were visible. A man entered from the left, walked behind a customer and approached the woman teller. He pulled a gun and ordered the tellers to put the large bills on the counter. He put the bills in a paper sack and backed out of the bank.

After viewing the video, subjects engaged in another 20 min. filler activity, and then they were asked to write down the events of the robbery in as much detail as possible.

On day 2, subjects were met by Experimenter B and escorted into room B, which was quite different in size and appearance from room A. At this time, subjects participated in one of three post-event conditions. Two-thirds of them read a narrative, under the belief that it was written by a police cadet. Subjects were asked to rate the narrative on clarity of writing, etc.

Two versions of the narrative were used. Misleading information was introduced in one version of the narrative. Five critical details were inaccurately reported. For example, one of the statements was, 'The male customer wore a gray sport coat and a green shirt'. The customer was in fact wearing a gray sport coat and a blue shirt. The robber was described as having straight hair when actually his hair was wavy. The robber supposedly put the money in a cloth sack when actually it was a paper bag. Approximately one-third of the subjects received this misinformation version.

A second version of the narrative, given to one-third of the subjects, contained the same information as the misleading narrative, except that no reference was made to the inaccurately reported details. For example, 'The customer wore a gray sport coat', or 'The robber had brown hair'. The remaining subjects did not read a narrative, but instead they read a Thurber fable that occupied the same amount of time.

For testing purposes, subjects were assigned to one of two conditions. In the guided memory condition, subjects listened to an audio tape designed to recreate the context under which the initial event was viewed. The tape asked subjects to relax, close their eyes and image as strongly as they could a sequence of images. During four pauses, subjects were asked to write down their images: (1) 'What was your first impression of the room as you walked in the door?'; (2) 'What part of the room did you notice first?'; (3) 'Visualize the parts of the room you found most interesting'; (4) 'Are there other parts of the room which you can visualize?'. The audiotape contained no information about the room or video tape. We used an audio tape to minimize the experimenter–subject interaction that was so prominent in the Malpass and Devine (1981) method. Control subjects listened to ten minutes of music instead of the guided memory tape.

Finally, subjects were tested with a 24-item, short-cued recall test. Eighteen questions asked about non-critical details, that is details that were not inaccurately referred to in the misleading narrative. For example, two questions were 'How many tellers were visible in the bank?' and 'What instructions did the robber give the tellers after they put out the money?'. Five questions concerned the critical details that were inaccurately reported in the misleading narrative. For example, subjects were asked 'In what type of container did the robber place the money as he took it off the counter?'. One of the questions asked about posters hanging on the wall of the experimental room. Subjects were to respond based upon their own memories.



Table 9.1 Data from experiment 1.

| Noncritical correct | Post-event condition | | |
|---|---|---|---|
| | Neutral | Misleading | Fable |
| Music | 10.59 | 9.97 | 10.53 |
| Guided memory | 10.52 | 9.68 | 11.07 |
| **Critical correct** | **Post-event condition** | | |
| | Neutral | Misleading | Fable |
| Music | 2.86 | 2.27 | 2.74 |
| Guided memory | 3.10 | 3.05 | 3.50 |
| **Misinformation acquired** | **Post-event condition** | | |
| | Neutral | Misleading | Fable |
| Music | 0.65 | 1.46 | 0.61 |
| Guided memory | 1.10 | 1.55 | 1.39 |

## Results

We examined the performance of three dependent variables: non-critical correct (number of correct answers to all but the critical questions, maximum = 19); critical correct (number of correct answers to the critical items, maximum = 5); misinformation acquired (number of times a subject responded with the inaccurate information contained in the misleading narrative, maximum = 5). The influence of misleading information should be evident in a lower 'critical correct' score and/or a higher 'misinformation acquired' score. The data are presented in Table 9.1.

Did guided memory affect performance? A 2 × 3 Analysis of Variance (Guided memory/music vs Post-event condition) was performed for each of the three dependent variables. Subjects receiving guided memory did

not differ significantly from music controls in the number of non-critical items answered correctly, $F>1$. However, compared to music controls, guided memory subjects correctly recalled significantly more critical items $F(1,187) = 6.075$, $p>0.01$. But, guided memory subjects were also significantly more likely than music controls to recall the misinformation $F(1,187) = 5.65$, $p>0.02$. A simple main effects contrast between misled subjects who received guided memory and who listened to music yielded no significant differences for misinformation acquired, $t>1$. The significant differences found in misinformation acquired were found in subjects who had no exposure to the misleading information. So, while guided memory improved the recall of critical items, it had no effect on the number of times misled subjects responded with the misinformation.

Did misinformation affect memory? Subjects who received the misleading narrative reported the inaccurately described information more often than those who received the neutral narrative or fable, $F(2,187) = 4.7$, $p>0.01$. Type of narrative did not affect subjects' recall of the non-critical items $F(2,187) = 1.62$. Also type of narrative did not affect the number of accurately recalled critical details, $F(2,187) = 1.97$, although misled subjects did perform somewhat worse than the other two groups.

Did guided memory undo the misinformation effect? There was no interaction between type of narrative and the use of guided memory for any of the three dependent measures ($F>1$). Guided memory did make misled subjects perform slightly more accurately on the critical items than music controls (3.05 vs 2.27 items correct). On the other hand, guided memory and music controls acquired the same amount of misinformation (1.55 vs 1.46 items). Thus, guided memory apparently shifted some of those who would have made a miscellaneous error into making a correct response.

### Discussion

The results of Experiment 1 were unexpected. On the non-critical items, where we expected to see an effect of guided memory, there was none. On the critical items, guided memory subjects were more likely to answer correctly than were music controls. There is no evidence to support the contention that guided memory can undo the negative effects of misinformation.

Because of the unusual effect of guided memory, we were anxious to conduct another experiment that would hopefully use a stronger context reinstatement technique. With this goal, we decided to combine the guided memory of Experiment 1 with another 'proven' context reinstatement technique—environmental context. Smith (1979) had found that subjects who physically or mentally reinstated the original environmental context performed better than subjects who were tested in a different environmental



context. (It was only later that the fragility of the environmental context effect was brought to our attention, Fernandez and Glenberg, 1985). Our idea was to combine the two context reinstatement methods to produce a more powerful manipulation, a kind of multiple context reinstatement. Hence Experiment 2.

## EXPERIMENT 2

Experiment 2 was similar in many respects to Experiment 1 with the addition of a new variable, same or different environmental context.

### Method

*Subjects*

The subjects were 142 introductory psychology students from the University of Washington who participated for class credit. Subjects were tested in groups of 6–10.

*Design and procedure*

The experiment was a $3 \times 2 \times 2$ factorial design. Two factors were identical to those investigated in Experiment 1: (1) post-event condition (misleading narrative, neutral narrative, or no narrative); (2) music or guided memory. The third factor was room-tested. Subjects were randomly assigned to be tested either in the room where they read the misinformation (room B) or in the room where they saw the video tape bank robbery (room A).

The procedure used on day 1 was identical to the procedure on day 1 in Experiment 1. Subjects spent 20 min. engaging in a filler activity, and then watched a 30 sec. video tape—all in room A.

On day 2, subjects were met by Experimenter B, escorted to room B, and read one of three narratives. Half the subjects were then escorted to room A; half remained in room B. Within each room, half the subjects heard the guided memory tape, and half heard ten minutes of music. Finally subjects were tested with the 24 item test.

### Results

As before, three dependent measures were computed: non-critical correct, critical correct, and misinformation acquired. The data are reported in Table 9.2.

Did context affect memory? A $2 \times 2 \times 3$ Analysis of Variance was performed for each of the three dependent variables. Subjects receiving guided

Table 9.2 Data from experiment 2.

| | | | |
|---|---|---|---|
| Noncritical correct | | | |
| Subjects tested in Room 'A' | | | |
| | Neutral | Misleading | Fable |
| Music | 12.08 | 11.43 | 10.07 |
| Guided memory | 11.93 | 10.31 | 11.00 |
| Subjects tested in Room 'B' | | | |
| | Neutral | Misleading | Fable |
| Music | 10.60 | 9.55 | 10.73 |
| Guided memory | 11.20 | 10.70 | 12.67 |
| Critical correct | | | |
| Subjects tested in Room 'A' | | | |
| | Neutral | Misleading | Fable |
| Music | 2.46 | 2.14 | 2.43 |
| Guided memory | 2.33 | 1.38 | 2.00 |
| Subjects tested in Room 'B' | | | |
| | Neutral | Misleading | Fable |
| Music | 2.90 | 2.18 | 2.45 |
| Guided memory | 2.30 | 2.20 | 2.44 |
| Misinformation acquired | | | |
| Subjects tested in Room 'A' | | | |
| | Neutral | Misleading | Fable |
| Music | 0.31 | 1.21 | 0.36 |
| Guided memory | 0.40 | 1.23 | 0.25 |
| Subjects tested in Room 'B' | | | |
| | Neutral | Misleading | Fable |
| Music | 0.20 | 1.91 | 0.36 |
| Guided memory | 0.20 | 1.10 | 0.44 |

memory did not differ significantly from music controls on non-critical correct, critical correct or misinformation acquired, $F>1$, $F = 2.6$, $p = 0.11$, $F>1$, respectively. Nor did the room in which subjects were tested affect any of the three performance measures, $F>1$, $F = 1.7$, $F>1$, respectively. One interesting comparison is between subjects who received both guided memory and environmental context reinstatement compared to subjects who received neither. On non-critical correct there was a slight advantage for the multiple context subjects (11.93 vs 10.60; 10.31 vs 9.55; 11.00 vs 10.73). One significant *post hoc* contrast was found: subjects in the multiple context reinstatement conditions (original room and tape) answered significantly more non-critical items correctly than the others, $t = 1.76$, $p>0.05$.

On the critical correct there was a slight *disadvantage* of multiple context over no context (2.33 vs 2.90; 1.38 vs 2.18; and 2.00 vs 2.45).



For misinformation acquired, there was a slight trend for subjects to acquire less given multiple context reinstatement (1.23 misleading details vs 1.91).

Type of narrative yielded a significant difference on misinformation acquired, $F = 15.6$, $p = 0.001$. However, neither non-critical correct nor critical correct were affected by type of narrative, $F = 1.4$ and $F = 2.4$, $p = 0.09$, respectively.

### Discussion

Subjects in the context-reinstatement conditions recalled more of the non-critical items than the control groups. However, they also recalled fewer of the critical items, exactly the opposite of the results obtained in Experiment 1.

It occurred to us that the effects of guided memory might be obscured if the control subjects were spontaneously engaging in some private form of context reinstatement. By controlling exposure to the original context, this hypothesis could be tested. The assumption here is that longer exposure to the original context would result in greater availability of contextual cues. If subjects normally use context-reinstatement as a retrieval strategy, then subjects in both the guided memory and the music control groups should perform equivalently as more contextual-cues are available. If context-reinstatement is used only after instruction, then changing the amount of exposure to the original context might have a differential effect on the music and guided memory subjects.

## EXPERIMENT 3

The design of this experiment was similar to that of Experiment 1. The major innovation was the introduction of a new variable—time spent in the original environment.

### Method

#### *Subjects*

Subjects were 72 psychology students from the University of Washington who participated for class credit. Subjects were tested in groups of 6–10.

#### *Design*

The experiment was a 3 × 2 × 2 factorial design. On day 1, subjects were exposed for either 3, 9 or 15 minutes to the original context. On day 2 subjects were assigned to either the misinformation or neutral

Table 9.3 Data from experiment 3.

| Noncritical correct | | | | |
|---|---|---|---|---|
| | | Number of minutes in original context | | |
| Music | | 3 | 9 | 15 |
| | Neutral | 6.80 | 8.17 | 7.80 |
| | Misleading | 8.75 | 8.33 | 7.71 |
| Guided memory | | | | |
| | | 3 | 9 | 15 |
| | Neutral | 7.50 | 9.17 | 8.67 |
| | Misleading | 8.83 | 8.70 | 9.71 |
| **Critical correct** | | | | |
| | | Number of minutes in original context | | |
| Music | | 3 | 9 | 15 |
| | Neutral | 3.40 | 3.67 | 3.40 |
| | Misleading | 3.25 | 3.50 | 3.00 |
| Guided memory | | | | |
| | | 3 | 9 | 15 |
| | Neutral | 3.75 | 4.67 | 3.00 |
| | Misleading | 3.67 | 4.00 | 3.71 |
| **Misinformation acquired** | | | | |
| | | Number of minutes in original context | | |
| Music | | 3 | 9 | 15 |
| | Neutral | 1.80 | 1.83 | 0.60 |
| | Misleading | 3.00 | 2.83 | 3.00 |
| Guided memory | | | | |
| | | 3 | 9 | 15 |
| | Neutral | 1.00 | 1.33 | 1.67 |
| | Misleading | 2.83 | 2.30 | 2.14 |

information condition and to hear either music or the guided memory tape.

*Procedure*

On day 1, subjects were met by Experimenter A and escorted to room A. Subjects were asked to listen to directions for approximately 1.5 min. Then, the experimenter pretended to adjust the video tape player until 2.5 min. had elapsed. In the 3-min. condition, the experimenter then immediately played the video tape of the robbery. In the 9-min. condition, the experimenter pretended to adjust the tape player and then left the room without speaking to the subjects. He returned after 8 total min. had elapsed (instruction time plus the time the experimenter was out of the room), and played the video tape. In the 15-min. condition, the experimenter left the room until 14 min. had elapsed. In all conditions, the subjects left the room immediately after viewing the video tape.



Day 2 proceeded exactly as in Experiment 1. Subjects were met by Experimenter B and escorted to room B to participate in one of two post-event conditions. Half the subjects read the narrative containing inaccurate information, and half read the neutral narrative. The narratives used in this experiment were similar to those used in Experiment 1, and identical to each other, except that 8 inaccurate items were reported in the misleading narrative.

Finally subjects were tested. Their test consisted of 8 critical items and 17 non-critical items. Prior to testing half listened to music and half listened to the guided memory tape used in Experiment 1.

**Results**

Performance in each of the 12 conditions was scored for the three dependent variables. The data are presented in Table 9.3.

A 3 × 2 × 2 Analysis of Variance was performed for each of the three dependent variables.

Did context affect memory? Subjects receiving guided memory did not differ significantly from controls on non-critical items correct, critical correct or misinformation acquired, $F = 3.379$, $p = 0.07$, $F = 2.035$, $p = 0.16$, $F > 1$, respectively. Nor did time in original room yield a significant difference on any of the performance measures, $F > 1$, $F = 1.77$ and $F > 1$, respectively.

We had thought that time in the original room might interact with the effects of context. Although not significant, there were some trends. If shorter duration of exposure to context reduces the effectiveness of contextual-temporal cues then the condition with the shortest exposure to the original context should perform worse on the recall test. If subjects in both control and guided memory groups are using context reinstatement as a retrieval strategy, then the improvement in performance should be the same for both groups of subjects. However, if only the guided memory subjects are making use of the available contextual cues then improvement should only be seen in the guided memory group. While the results were not significant the expected trends in the data appeared. In fact, sixteen of the eighteen cells have trends in the expected direction. For non-critical correct, the data can be collapsed across both post-event conditions. The differences are 0.63, 0.63, 1.48 as time in the original context increases. For

critical correct and misinformation acquired, only the subjects who read the misleading narrative are of interest. Notice that the differences for critical correct are 0.08, 0.37, and 2.0; the differences for misinformation acquired are 0.42, 0.50, and 0.71. In each case the subjects who were exposed to the original context longer and had guided memory instruction performed better on the recall tests.

Did misinformation affect memory? Subjects who read the inaccurate narrative reported significantly more misleading details, $F = 10.33$, $p < 0.002$. However, neither non-critical correct nor critical correct differed as a result of type of narrative, $F < 1$ for both variables.

### Discussion

Neither guided memory nor time yielded a significant difference in performance. There was, however, a suggestive trend for guided memory to improve accuracy in recalling critical items ($p > 0.07$), and also a trend for the benefit of guided memory to be larger as a function of initial exposure time in the original environmental context.

## GENERAL DISCUSSION

These three experiments painted a rather messy picture of context reinstatement. In Experiment 1, guided memory improved performance on critical items, but not on non-critical ones. In Experiment 2, there was no significant effect of guided memory alone; however, when combined with environmental context reinstatement a small improvement in performance for non-critical items emerged. In Experiment 3, guided memory produced a slight but non-significant improvement in performance on critical items. In short, although context effects were observed, they were small and unreliable.

How can our present results be reconciled with context research conducted in other laboratories? Some researchers have had considerable success with context reinstatement. For example, in the present volume both Geiselman (Chapter 11), and Cutler and Penrod (Chapter 10) observed reliable context effects over a series of experiments. Other researchers have not been so successful; Fernandez and Glenberg (1985) in a series of valiant efforts, failed to obtain reliable benefits of context reinstatement. We believe that the inconsistent effects of context reinstatement observed both here and in the literature may be the result of a number of different factors including differences in experimental designs, individual differences, and publication bias.



There are a number of respects in which our study differed from those of Geiselman, and Cutler and Penrod. Firstly, these researchers used an interviewer in a one-on-one setting. We used a tape to reinstate context in order to avoid possible demand characteristics generated by an interviewer motivated to establish the success of context reinstatement. It is possible that using a tape recording reduced the relative effectiveness of our procedure either because it eliminated demand characteristics or because it served as a less stimulating source of context reinstatement. Secondly, both Geiselman, and Cutler and Penrod, used multiple techniques for improving memory while we primarily used only one context technique (in one condition in Experiment 2 we used multiple reinstatement techniques and observed an effect of context). Geiselman used the four-stage cognitive interview that includes mental context reinstatement, reporting everything, recalling the events in different orders, and changing perspective. Cutler and Penrod used three techniques: mnenonic instructions, exposure to snapshots of the crime, and exposure to the witness's own written descriptions. Since these researchers did not test each technique individually, it is possible that their reliable results were either due to the use of different techniques or else to the additive effects of using multiple methods of context reinstatement. Thirdly, the stimuli used by these researchers were different from ours. Cutler and Penrod convincingly demonstrate that the effectiveness of context techniques varies dramatically depending on the degree to which the target serves as a contextual cue. It is possible that either our items or our test questions provided sufficient contextual cues to reduce/eliminate our contextual effect.

While procedural differences may account for why we observed substantially smaller context effects than the others reported in this volume, they do not immediately explain why our effect was so unreliable. Our effect was not just small, it was also quite erratic. Moreover, context reinstatment affected different items in different experiments. Any situation which produces inconsistent effects across experiments strongly implicates individual differences. Accordingly, some subjects may be more responsive to context reinstatement than others and, additionally, subjects may vary with regard to the types of items for which context reinstatement is most effective. Such an interpretation seems particularly likely in light of Cutler and Penrod's observation that differences in target items can influence the magnitude of the effect; that is, optimal items for context reinstatement may vary from subject to subject and thus magnify the influence of individual differences. Individual differences may also account for the apparent benefits of using multiple context techniques; each subject is more insured of receiving at least one suitable technique. Clearly more research is necessary to explore the potential role of individual differences in context reinstatement.

We concede that the above considerations may account for our small and unreliable results; nevertheless we are still left with a slightly bitter aftertaste. We considered entitling this paper 'Three context reinstatement experiments that never would have been published in a journal'. It was not the experimental design that would have hampered our publishing efforts, but rather our results. Editors are notoriously unwilling to publish experiments with null or inconsistent results. This publication bias may have produced exaggerated estimates of the significance of context effects. After conducting a meta-analysis of 128 eyewitness research articles, Shapiro and Penrod (1986) concluded that context reinstatement was one of the most powerful variables to influence performance. Context reinstatement was as powerful a variable as exposure time and retention interval, two classics from memory literature. Publication bias may have particularly favoured context reinstatement in this meta-analysis. Context manipulations are typically the main purpose for a study and only get published if the effects are significant. Other variables, for example gender, are often secondary variables that appear in the literature even when not significant if there is some other independent variable that did produce significant results. Thus finding null gender effects in the literature is common; finding null context effects is not. The only circumstance likely to warrant the publication of a failure to find that context benefits memory is a vigorous failure to replicate a well-known result (e.g. Fernandez and Glenberg, 1985) or a reverse finding—context reinstatement produces significantly worse memory (Loftus, Manber and Keating, 1983). Thus cognitive psychologists who read only the published literature may have been presented with a biased view of the power of context effects.

Returning to the secretary for the law firm who desperately needed to find the critical missing X-ray, we tried to help her. We used guided memory technique to try to reinstate the context of her initial exposure to the item. When we failed to pluck the much-needed but recalcitrant memories from her mind, we should have known how our experiments might turn out.

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