

## Research Article

# Postidentification Feedback Affects Real Eyewitnesses

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**ABSTRACT**—*Many studies of simulated eyewitness situations have shown that under certain laboratory conditions, people's confidence about their identifications predicts their accuracy, but that their reported confidence can be affected by telling them that they chose the suspect. In this study, eyewitnesses (n = 134) to real crimes took part in lineups at an identification suite in the United Kingdom and were asked questions about their memory both before and after they were told whether they had identified the suspect or a filler. Before the eyewitnesses were told whether they had identified the suspect or a filler, their responses to several questions reliably differentiated between those who identified the suspect and those who identified a filler. In addition, responses to the memory questions were affected by telling the eyewitnesses whether or not they had identified the suspect. These results show that postidentification feedback affects real eyewitnesses and highlight the importance of recording meta-memory variables before an eyewitness discovers whether he or she has identified the suspect.*

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Differentiating accurate from inaccurate eyewitness identifications is a goal of many police investigators and juries, and has become a vibrant area of psychological research. Under certain conditions, how confident a person is can be a moderate to good predictor of his or her accuracy, but in other conditions, confidence is a poor predictor of accuracy (Brewer & Wells, 2006). Sporer, Penrod, Read, and Cutler's (1995) meta-analysis of 30 studies showed that, on average, when subjects made an identification, their confidence was a good predictor of their accuracy ( $r = .37$ , 95% confidence interval: .32–.42). However, there was more variability among the individual correlations than would be expected if all these studies had measured a single correla-

tion value. The 95% credibility interval (i.e., that interval expected to include approximately 95% of all the population correlations for different situations) was from .20 to .55. Given this interval, one might conclude that the correlation between confidence and accuracy for actual eyewitness identifications is likely to be somewhere between .20 and .55. Unfortunately, this would not be a valid conclusion precisely because the results of the meta-analysis show that there is not one single association for all situations, which means it is vital that the studies sampled be representative of all potential situations of interest (Wright, 2006). Although many of the authors of the studies included in the meta-analysis attempted to mimic real crime situations, the set of studies is not representative of the entire population of interest.

One of the most important findings of the past decade of research on eyewitness testimony is that a person's confidence in his or her testimony can be affected by what other people say. Wells, Douglass (née Bradfield), and other researchers (e.g., Bradfield, Wells, & Olson, 2002; Dixon & Memon, 2005; Wells & Bradfield, 1998) have conducted several laboratory studies demonstrating that responses to meta-memory questions like "how difficult was it for you to make an identification?" are affected by telling respondents that they identified the suspect or that they identified an innocent filler. In a meta-analysis of the size of this postidentification-feedback effect in different situations, Douglass and Steblay (2006) found the effect is stronger for measures of certainty than for other measures, such as responses regarding the eyewitness's view of the culprit and his or her memory in general.

Douglass and Steblay (2006) also found a larger effect for responses providing confirming evidence than for responses providing disconfirming evidence. This difference may have been due to the fact that most of the studies they sampled used target-absent lineups, which made the identification task difficult and often impossible.<sup>1</sup> If people make a choice from a six-

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<sup>1</sup>The film Wells and his colleagues often use for their studies on postidentification feedback can be viewed on the Web at <http://www.psychology.iastate.edu/faculty/gwells/theeyewitnesstest.html>. The film we often use for such studies can be viewed at <http://www.sussex.ac.uk/Users/danw/Elinweb.htm>.

person lineup and are told that they have chosen the suspect, they may be surprised because the task was difficult; this surprise may result in a larger postidentification-feedback effect than is found in people who are told that they have chosen a filler. The situation may be different with real lineups, however. The police officers we have spoken with have said that eyewitnesses seem more surprised when told that they have identified a filler than when told that they have identified the suspect. Therefore, Douglass and Steblay's finding may not generalize to actual lineups.

In the present study, our goal was to take these findings, two of the most important in eyewitness research, out of the laboratory and see if they occur with real eyewitnesses taking part in real lineups ("identification parades" in British English). There have been several archival studies of lineups (e.g., Valentine, Pickering, & Darling, 2003; Wright & McDaid, 1996), but the eyewitnesses in these studies were not asked for any meta-memory judgments. The most relevant archival study was conducted by Behrman and Richards (2005; see also Behrman & Davey, 2001). They took the verbal descriptions often given by eyewitnesses (phrases like "absolutely certain," as opposed to "not quite sure") and used these to calculate measures of confidence. They found eyewitnesses who identified fillers had lower confidence than those who identified the suspect. There has been no similar study looking at postidentification feedback.

A difficulty analyzing data from real lineups is not knowing if the suspect is in fact the culprit. If much is known about the case, it is possible to estimate the likelihood that the suspect is guilty independent of the identification, as Behrman and Davey (2001) did. It is also possible to look at courtroom decisions, but these are affected by eyewitnesses' identifications, so that they do not provide an independent measure of accuracy. Because of the anonymity requirements for our data collection, it was not possible to match the responses from our eyewitnesses with more detailed case information. Therefore, we had to make some assumptions about the performance of eyewitnesses. The first assumption was that identification of a filler was an error. Estimating how often eyewitnesses are correct when they identify the suspect and when they identify no one in the lineup is more difficult. Penrod (2003) used Behrman and Davey's data to estimate how often eyewitnesses make correct identifications. He estimated that about 75% of the time when no identification is made, the culprit is in the lineup. He also estimated that about 85% of the time when the suspect is identified, he or she is guilty, although about 15% of the time, this correct identification is actually a guess. These estimates are based on many assumptions, including an assumption about the overall proportion of lineups in which the suspect is guilty, which varies by jurisdiction (Wells & Olson, 2002). If a jurisdiction conducts lineups only when the suspect is almost certainly guilty, then very seldom will an innocent suspect be identified. However, if lineups are used mainly to exonerate suspects who the police think are probably innocent, a much larger proportion of

innocent suspects will be identified. Penrod's estimates provide only a rough guide, but it seems reasonable to assume that most identifications of suspects are correct.

Our first aim in this study was to discriminate suspect from filler identifications in real police lineups and examine if the size of the differences between groups on the meta-memory variables was similar to that found in laboratory studies comparing accurate and inaccurate identifications (Sporer et al., 1995). Our second aim concerned the malleability of responses to the meta-memory questions and the postidentification-feedback effect. We asked eyewitnesses six questions, although here we focus on the question, "How difficult was it for you to figure out which person in the identification parade was the person who committed the crime?" because this question is the one most associated with confidence ( $r = .74$ ; Wells, Olson, & Charman, 2003, Table 3) and was shown to have a large effect in Douglass and Steblay's (2006) meta-analysis.

Our study took place in the United Kingdom, where lineup procedures differ in several important ways from those in the United States (Kebbell, 2000). Almost all lineups in the United Kingdom are now conducted in specialist lineup suites (which are separated from the rest of the police station and operated by their own personnel), using video files of the suspect and eight or more fillers (Valentine et al., 2003).<sup>2</sup> Valentine and Heaton (1999) described the video procedures in more detail and showed that video lineups are more fair than traditional live lineups. At the identification suite that participated in our study, the police officer constructing the lineup inputs some basic descriptive information about the suspect into a computer, and the computer searches a database of approximately 20,000 faces to produce a large set of potential fillers matching this description. The officer then chooses a much smaller subset for possible use in the lineup. The suspect's lawyer is given the opportunity to be involved in constructing the final lineup. The entire lineup is stored on a CD and shown to eyewitnesses when they become available. Thus, when there are multiple eyewitnesses, the same lineup is used for each.

The identification suites in the United Kingdom follow a code of practice that was outlined in the 1984 Police and Criminal Evidence Act (Home Office, 2005). One rule is that eyewitnesses have to look at each person twice before making any decision. Although Weber, Brewer, Wells, Semmler, and Keast (2004) found that the time to make an identification is negatively correlated with accuracy, because of this rule, the relation between response time and accuracy is more difficult to evaluate in the United Kingdom than in the United States.

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<sup>2</sup>Suspects are not required to be video-recorded, but in almost all cases they agree to the recording. If they do not, the police are allowed to use photographs taken when the suspect was first detained, and a photo spread is used instead of a video lineup. A photo spread is also used when the suspect's appearance has changed since the time of the crime.

## METHOD

### Ethical and Practical Issues

In the typical eyewitness laboratory study, anonymity and confidentiality are maintained out of professional courtesy. It is unlikely anybody would be interested that a particular subject gave a particular answer. In the present study, ethical concerns were more serious because our data could be subpoenaed if lawyers felt these data could help their case. Therefore, we took safeguards so that it would be difficult to ascertain an individual's identity either from the data file or from the response sheets. We recorded only each eyewitness's identification during the lineup and whether the eyewitness was a victim or a witness. The eyewitness identifier used in the data file did not correspond to when the lineup took place. Finally, the written response sheets required eyewitnesses only to circle six numbers, so it would be difficult for a handwriting expert to identify an eyewitness from his or her response sheet. Ironically, one of the main conclusions from this study is that it would be good, in the future, to make meta-memory ratings available to the courts.

In laboratory studies, the researcher is free to ask subjects almost any meta-memory question. In the present study, more care was needed both because the eyewitness was often in a fragile state (e.g., the victim of an attack would likely be emotional immediately after having to think about the crime) and also because some questions were inappropriate for legal reasons. Taking into account the sensitivity of many eyewitnesses, we did not ask any eyewitnesses to rape or murder cases to participate. We examined all other cases individually to determine if the eyewitness might be in a particularly sensitive state.

After much discussion, we decided not to ask the eyewitnesses directly about their confidence. The words *confidence* and *certainty* have become part of legal jargon, and we felt that asking a question using the word *confidence* could prompt a lawyer involved in one of the cases to want access to our data. This would jeopardize the ethics (participants' anonymity) of the study, so this word was avoided. A question about how difficult the identification was served as a proxy for measuring confidence. We did not ask eyewitnesses whether they would be willing to testify in court, as Wells and Bradfield (1998) had, because the eyewitnesses could feel that their responses were legally binding.

The study was conducted in collaboration with the Sussex police and with their approval. The study received ethical clearance from the Psychology Ethics Committee at the University of Sussex.

### Sample

The lineups occurred at the Sussex Identification Suite in Brighton, United Kingdom, where almost all lineups in Sussex occur. During the study, there were no murder cases. There were rape cases, but we did not ask the eyewitnesses in these cases

to participate. There were no other cases in which we felt the eyewitness would have been negatively affected by taking part in our study. When an eyewitness took part in more than one identification parade, we used data from the first parade only. In total, 136 eyewitnesses were approached, and 134 agreed to take part. Two thirds were victims.

### Procedure

Before each lineup, the eyewitness arrived at the identification suite and was brought to a prelineup waiting room with a witness support officer and a guardian, if applicable. A civilian employee of the suite arrived, explained the lineup procedure, and took the eyewitness to the parade room, where a police officer was waiting. The police officer, who was a full-time employee of the suite and not connected with the case, showed the eyewitness the computer display system and emphasized that the culprit might or might not be in the lineup. The police officer usually knew which person in the lineup was the suspect, a problem that we discuss at the end of this article. The eyewitness was then shown the lineup in accordance with the Police and Criminal Evidence Act (PACE). If the eyewitness made an identification, the police officer did not say whether the suspect was identified.

The eyewitness was then taken by the civilian employee to a postlineup waiting room, where the witness support officer, the researcher, and a guardian, if applicable, were waiting. The researcher asked if the eyewitness would take part in the study. If the eyewitness agreed, he or she was randomly allocated to either Group A or Group B. Participants in Group A were asked the following three questions and responded using scales from 1 through 10 (verbal anchors of the scale are listed after each question):

- *View*: "How good a view did you have of the culprit during the crime?" (scale from *poor view* to *very good view*)
- *Time*: "Sometimes people are able to make an identification very quickly. Other times people have to think about it for a while. How quickly were you able to make your identification?" (scale from *immediately* to *had to think about it for a very long time*)
- *Face*: "Some people have good memories for the faces of strangers who they have only seen once, some people have poor memories. In general, do you have a good memory for people you have only seen once?" (scale from *poor memory* to *very good memory*)

Participants in Group B were asked three different questions, which also had scales from 1 through 10:

- *Attention*: "How much attention did you pay to the culprit during the crime?" (scale from *no attention* to *my complete attention*)

- *Ease*: “How difficult was it for you to figure out which person in the identification parade was the person who committed the crime?” (scale from *very difficult* to *very easy*)
- *Event*: “Some people have good memories for everyday events like going to the supermarket; some people have poor memories of these events. In general, do you have a good memory for everyday events?” (scale from *poor memory* to *very good memory*)

The questions were presented to the eyewitnesses on a response sheet, but the researcher was also there to read the questions if the eyewitness did not feel comfortable reading them. One eyewitness did not speak English, so the translator who was there with him for the lineup translated the questions and his responses.

Next, the police officer came into the room and told the eyewitness the outcome of the identification (i.e., whether he or she had identified the suspect or a filler). The researcher then had the eyewitness answer the three questions that he or she had not answered previously. Afterward, the eyewitness was debriefed and thanked. Eyewitnesses were not paid for participating.

The six meta-memory questions used are based on those used by Wells and Bradfield (1998). We chose them so that all eyewitnesses were asked about their encoding circumstances (view and attention questions), about their identification (time and ease questions), and about their general memory ability (face and event questions) both before and after discovering the lineup outcome. Using a design in which eyewitnesses are asked questions both before and after discovering the lineup outcome

makes it possible to collect more data from each eyewitness, but tends to decrease the size of the postidentification effect (Wells & Bradfield, 1998, Experiment 2).

Some eyewitnesses made no identification. The questions were not designed for them, so their responses are not considered here.

## RESULTS AND DISCUSSION

Of the 134 eyewitnesses, 21% made no identification, 21% identified a filler, and 58% identified the suspect. These percentages are different from those obtained in past archival studies in the United Kingdom (i.e., Slater, 1994; Valentine et al., 2003; Wright & McDaid, 1996), which yielded percentages of approximately 40, 20, and 40%, respectively, but are closer to Behrman and Davey’s (2001) percentages of 26, 24, and 50%. These percentages vary by jurisdiction because of differences in how much evidence is required to hold a lineup.

Less than 1% of responses were missing—in most cases, because the participant marked two responses. These scores were excluded only from analyses involving the variable with the missing values. The scores of the time variable were reversed. Thus, higher scores corresponded to better view, quicker identification, more attention, more easy identification, and better memory, and we expected that all items would be positively correlated with each other, which they were.

The top half of Table 1 shows results for eyewitnesses’ responses prior to being told whether they identified the suspect.

**TABLE 1**  
*Responses to the Six Meta-Memory Questions, Before and After the Eyewitness Was Told the Outcome*

Question	Person identified as the suspect				Difference between responses of subjects who identified the filler and subjects who identified the suspect			
	Filler	SD	Suspect	SD	95% confidence interval	<i>t</i> ( <i>df</i> )	<i>p</i> <sub>rep</sub>	<i>r</i> <sub>pb</sub>
Before discovering outcome								
View	6.75	2.93	8.32	2.26	(0.03, 3.16)	1.97 (51)	.87	.27
Time	4.91	2.51	7.88	2.86	(1.07, 4.87)	3.14 (51)	.97	.40
Face	6.00	1.91	7.47	2.19	(0.07, 2.86)	2.11 (53)	.89	.28
Attention	6.56	2.45	8.15	2.32	(0.14, 3.03)	2.21 (48)	.91	.30
Ease	4.88	2.73	7.76	2.85	(1.17, 4.60)	3.39 (48)	.98	.44
Event	6.38	1.96	7.79	1.82	(0.28, 2.56)	2.51 (48)	.94	.34
After discovering outcome								
View	5.75	2.59	8.38	2.02	(1.28, 3.98)	3.92 (48)	.99	.49
Time	4.69	2.15	6.91	3.22	(0.67, 3.78)	2.88 (42.08)	.96	.34
Face	4.88	1.45	7.68	2.04	(1.66, 3.95)	4.92 (48)	.99	.58
Attention	5.17	2.55	8.11	2.21	(1.47, 4.49)	3.97 (51)	.99	.49
Ease	2.75	1.66	8.60	2.08	(4.54, 7.17)	8.96 (53)	.99	.78
Event	6.75	2.93	8.07	1.96	(−0.60, 3.24)	1.47 (13.86)	.76	.25

**Note.** In cases in which Levene’s test for equality of standard deviations was significant, the *t* values, degrees of freedom, *p*<sub>rep</sub> values, and confidence intervals were adjusted. The *p*<sub>rep</sub> statistic is calculated from the *p* value (Killeen, 2005). A *p* value of .05 produces a *p*<sub>rep</sub> of .88.

The correlations ( $r_{pb}$ ) were all within the credibility interval reported by Sporer et al. (1995) and in Cohen's (1988) terms represent medium-sized effects. All the effects were in the predicted direction, with eyewitnesses who identified suspects reporting having better views and paying more attention to the culprit, making their decision more quickly, and finding the task easier than eyewitnesses who identified fillers. Eyewitnesses who identified suspects also reported having better memory for faces and events. This difference in reported memory may have arisen because in fact they did have better memory (and therefore did not choose fillers) or because they temporarily believed this, having just made an identification with more confidence than the eyewitnesses who chose fillers. The effects were fairly reliable, with  $p_{rep}$ s of .87 or higher (meaning there is at least an 87% probability that if the study were repeated, the observed effects would be in the same direction; Killeen, 2005).

The bottom half of Table 1 shows the same statistics for questions asked after the eyewitnesses were told whether they chose the suspect. The statistics showed the same pattern, and overall the effects were larger, with correlations in Cohen's (1988) medium to large range. The increased effect size was expected from the postidentification-feedback effect.

We examined the postidentification-feedback effect by conducting a 2 (choice: suspect, filler)  $\times$  2 (time of questioning: before discovering outcome, after discovering outcome) between-subjects analysis of variance for each of the meta-memory questions. As the means in Table 1 show, scores generally went down for participants who had chosen a filler and up for participants who had chosen the suspect. Given that Douglass and Steblay (2006) found a particularly large effect for measures of certainty, we focus on the ease question. Responses to this question showed a main effect of choice,  $F(1, 101) = 65.68$ ,  $p_{rep} = .99$ ,  $\eta_p^2 = .39$ , with people who chose the suspect thinking the task was simpler than those who chose a filler, and a non-significant effect, overall, for whether the question was asked before or after participants discovered the identity of the suspect,  $F(1, 101) = 1.42$ ,  $p_{rep} = .69$ ,  $\eta_p^2 = .01$ . The most important finding of this study is the significant interaction between choice and time of questioning,  $F(1, 101) = 7.55$ ,  $p = .006$ ,  $p_{rep} = .96$ ,  $\eta_p^2 = .07$ . People who chose a filler showed a downward shift, from 4.88 to 2.75, or approximately 1 standard deviation. People who chose the suspect showed an upward shift, from 7.76 to 8.60, or approximately a third of a standard deviation. It is necessary to be cautious in comparing these effects because many responses of eyewitnesses who identified the suspect were near 10, so there was a ceiling effect.

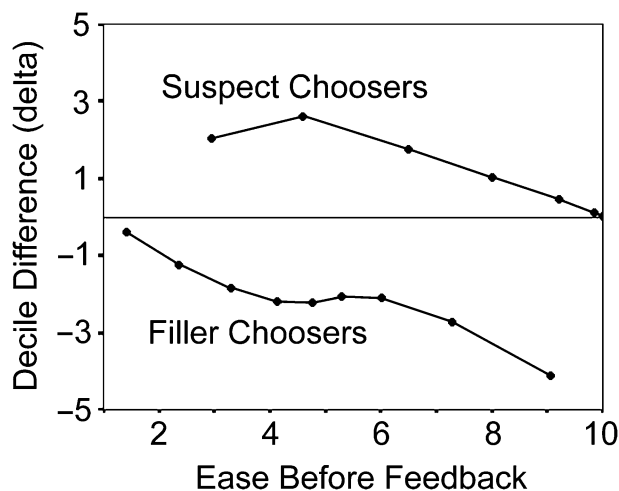
Comparing means shows that overall there was a downward shift for participants who chose a filler and an upward shift for those who chose a suspect. However, this comparison does not indicate whether the shift varied with confidence (e.g., whether among eyewitnesses who chose the suspect, the least confident showed the greatest shift). Penrod (2003) estimated that about 15% of correct suspect identifications are what he called guesses

and that another 15% of suspect identifications are incorrect. It is a particular concern when eyewitnesses identify the suspect but find the task difficult, because these identifications are the most likely to be errant. To examine whether this group was particularly affected by postidentification feedback, we estimated the mean response for each decile (each 10%) using the Harrell-Davis estimator (Harrell & Davis, 1982). Figure 1 shows the differences between the values before participants discovered whether they identified the suspect and the values after participants discovered whether they identified the suspect, what is called the shift function (Wilcox, 1997). The graph shows that among eyewitnesses who identified the suspect, there was relatively little postidentification-feedback effect for people near the top of the ease scale, but for the lowest 20 to 30% of the scale, the shift was about 2 or 3 units, or approximately 1 standard deviation. Thus, people who without feedback would have responded with a 4 or 5 on the scale would respond with scores of 6 to 8 after feedback. The shift for eyewitnesses who chose fillers also depended on pre-discovery ease ratings. There was little effect for those who found the task difficult. However, for those on the high end of the ease scale, the disconfirming feedback had a very large effect, such that people who without feedback would have given a rating of 8 or 9 would choose 4 or 5 after feedback. The size of these effects must be viewed with some caution because of both ceiling and floor effects.

## SUMMARY AND RECOMMENDATIONS

Responses to each of six meta-memory questions discriminated between eyewitnesses who chose the suspect and those who chose a filler. This was true both before and after the eyewitnesses were told the outcome of their identification and has important forensic implications. Finding out whether they had identified the suspect or a filler affected eyewitnesses' responses to the ease question. It is important to note, however, that the police officer conducting the lineup was usually aware of which person in the lineup was the suspect. Although the officer did not tell the eyewitnesses the outcome, it would have been virtually impossible for even the most careful officer not to provide some verbal and nonverbal cues (see chapters in Sebeok & Rosenthal, 1981). Consequently, the effect sizes for the association between the meta-memory variables and lineup choice before finding out the lineup result may be inflated and the estimates for the postidentification-feedback effect deflated. Thus, the postidentification-feedback effect may be even larger than we report. We agree with other researchers (e.g., Wells et al., 1998) that double-blind procedures should be used for lineups.

Our main recommendations concern assessing confidence and other meta-memory variables. On the basis of a wealth of laboratory studies, Wells and his colleagues (Wells et al., 1998, 2000; Wells & Olson, 2003) have recommended recording confidence after eyewitnesses make an identification, but before they discover the outcome of the identification. In this study, the



**Fig. 1.** Change (delta) in judged ease of the identification for each decile of responses to the initial ease question. Change was calculated by subtracting the estimated mean judgment before feedback from the estimated mean judgment after feedback. Results are shown separately for eyewitnesses who chose a suspect and those who chose a filler during the lineup.

meta-memory judgments of real eyewitnesses prior to finding out the outcome of the lineup were moderate predictors of accuracy (if one assumes most of the identifications of suspects were accurate). Thus, we agree that recording confidence and other variables at this point is of diagnostic value and could help jurors and other individuals to assess the reliability of an identification.

We also found that the postidentification-feedback effect occurs with real eyewitnesses. Telling eyewitnesses that they did or did not pick the suspect affects how difficult they think the task was. It is a particular concern that the effect was strong for those people who chose the suspect and found the task relatively difficult (Fig. 1). According to Penrod's (2003) analysis, approximately 30% of suspect identifications are guesses, and about half of these guesses are identifications of an innocent suspect. Confirming feedback may mask any apparent uncertainty that might help to differentiate accurate from inaccurate identifications. It is critical that any recording of eyewitnesses' confidence be done prior to when they discover the outcome of the lineup; otherwise, their confidence will be contaminated by the postidentification feedback.

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