

## Research Report

### DISTORTIONS IN EYEWITNESSES' RECOLLECTIONS: Can the Postidentification-Feedback Effect Be Moderated?

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**Abstract**—Giving eyewitnesses confirming feedback after they make a lineup identification (e.g., “Good. You identified the actual suspect.”) inflates not only their recollections of how confident they were at the time of the identification, but also other testimony-relevant judgments, such as how good their view was, how much attention they paid during witnessing, and how quickly they identified the suspect. We replicated this postidentification-feedback effect with eyewitnesses who had made false identifications ( $N = 156$ ), adding critical conditions in which after the identification but prior to the feedback, some eyewitnesses were given instructions to privately think about their confidence, their view, and other matters. Other eyewitnesses were given the same thought instructions subsequent to the feedback manipulation. Prior thought served to mitigate the effects of feedback, but subsequent thought did not. In addition, even without feedback, privately thinking about confidence had some confidence-inflating properties of its own.

There is increasing evidence that mistaken eyewitness identifications from lineups and photo spreads are the most frequent cause of juries convicting innocent persons. Analyses of cases in which people were mistakenly convicted by juries have shown eyewitness misidentification to account for more cases than all other causes of wrongful conviction combined (see Wells et al., 1998). The problem of mistaken identification is exacerbated when eyewitnesses are mistaken yet highly confident in their testimony (Wells, 1997).

Eyewitness scientists have been exploring ways that the justice system could minimize the problem. Among the recommendations is blind testing: The person who administers the lineup should not know which person is the suspect (Wells, 1993; Wells & Seelau, 1995). Lineup procedures in the United States, however, do not involve blind testing and, instead, are conducted by the case agent, the very person who developed the suspect in the first place. Hence, the opportunity for the lineup agent to influence the eyewitness's identification or influence the way that the eyewitness feels about the identification is substantial. The work we report here explored how the lineup agent can influence the testimony that eyewitnesses give about their identifications.

How confident an eyewitness feels about his or her identification is a primary determinant of whether jurors will accept the identification evidence as being accurate (e.g., Cutler, Penrod, & Dexter, 1990; Fox & Walters, 1986; Lindsay, Wells, & Rumpel, 1981; Wells, Lindsay, & Ferguson, 1979). Therefore, the phenomenon of false confidence, the tendency of an eyewitness to be highly confident in the accuracy of a false identification, is particularly problematic. Some instances of false confidence are to be expected from the fact that confidence and accuracy in eyewitness identification are only modestly

related (see the meta-analysis by Sporer, Penrod, Read, & Cutler, 1995). Other instances of false confidence, however, could be a product of the way the eyewitness-identification evidence is collected. Our work concerns the creation of false confidence by external influences, in particular, giving feedback to eyewitnesses after they make their identification. Telling eyewitnesses who have made false identifications that they identified the actual suspect or the same person that another witness identified leads to robust inflation in the eyewitnesses' confidence in their identifications (Luus & Wells, 1994; Wells & Bradfield, 1998).

#### THE POSTIDENTIFICATION-FEEDBACK EFFECT

The idea that confirming feedback would lead to confidence inflation is not surprising. What is surprising, however, is that confirming feedback that is given after the identification leads eyewitnesses to misremember how confident they were at the time of the identification (Wells & Bradfield, 1998). Because the feedback manipulation occurs after the identification has already been made, random assignment to conditions ensures that the confirming-feedback and no-feedback (control) eyewitnesses are in fact equally confident at the time of the identification. Hence, confirming feedback does not merely inflate how confident the witness feels after the feedback; it distorts eyewitnesses' recollections of how confident they recall having been at the time of the identification. Even more surprising is that confirming feedback also distorts the eyewitnesses' recollections of their witnessing conditions (e.g., how good a view they had of the perpetrator), as well as their recollections of their identification behaviors (e.g., how long it took to make the identification). Simply put, feedback has effects on eyewitnesses' recollections of a wide array of variables. We refer to this as the postidentification-feedback effect.

We believe that the postidentification-feedback effect occurs because eyewitnesses are not forming “on line” evaluations of these variables (e.g., confidence, view, speed of identification) prior to the feedback manipulation (Wells & Bradfield, 1998). The first time eyewitnesses consider these variables is when they are asked to estimate them; by that time, the feedback manipulation has already happened. Having no significant memorial record of these judgments prior to the feedback, the eyewitnesses can only infer values for these variables in the context of the feedback. Consistent with this interpretation, one study found that most eyewitnesses thought that the feedback did not influence their judgments (Wells & Bradfield, 1998). Furthermore, those who said that the feedback did not influence them were as influenced as were those who said the feedback did influence them. Apparently, the absence of a clear memorial trace for these variables prior to the feedback prevented the eyewitnesses from accurately determining whether the feedback influenced their judgments.

We propose a close parallel between the basic tenets of self-perception theory (Bem, 1967) and the processes governing the post-identification-feedback effect. According to self-perception theory, to

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the extent that internal cues are weak or ambiguous, people infer their beliefs from their behavior according to the context in which it occurs. Because eyewitnesses do not have clear memorial traces on which to rely, their internal cues (regarding prior certainty, attention, view, and so on) are weak, making them rely on their behavior (an identification) and the context (feedback) to infer these variables.

If this interpretation is correct, it should be possible to “inoculate” eyewitnesses against the postidentification-feedback effect by asking them to think privately about critical variables prior to the feedback manipulation. This prefeedback thought should produce a retrievable memory trace that would allow the eyewitnesses to more accurately recall their prefeedback confidence, their view, how long they took to make the identification, and so on. Hence, with prefeedback thought, eyewitnesses should be able to rely on internal cues to resist the influence of the feedback manipulation.

We used the postidentification paradigm (developed by Wells & Bradfield, 1998) in which all eyewitnesses made false identifications and were then randomly assigned to either confirming-feedback or no-feedback conditions. In some conditions, eyewitnesses were instructed to think privately about several variables (e.g., about how certain they were, how good their view was, how long they took to make an identification) prior to the feedback manipulation. Other eyewitnesses were instructed to think about these variables after the feedback manipulation. Still others were not instructed to think about these variables at all.

**METHOD**

**Participants and the Premanipulation Procedure**

Participants were 156 undergraduates who received an extra-credit point. They were told that the study involved making personality and occupation judgments about people. Each participant was then placed in his or her own cubicle to watch a video recording from an actual in-store security camera that captured the image of a person who shot and killed a security guard shortly after leaving the view of the camera. The video was edited to cue the participants to the gunman, but they did not see the shooting. The experimenter then explained that the true purpose of the study was to see if they could identify the gunman. The experimenter gave each eyewitness a five-person photo spread that did not contain the actual gunman, along with an identification sheet. Because this procedure implies that the actual gunman is in the lineup, eyewitnesses uniformly select someone. As with our previous studies (Wells & Bradfield, 1998), all of the participants made identifications.

**Experimental Manipulations and Dependent Measures**

After the eyewitnesses made their identifications, they were assigned randomly to one of the five conditions. In all conditions, 6 min elapsed before the dependent measures were taken. These measures consisted of answers to 13 questions (see Table 1).

**Table 1.** *Questions asked of eyewitnesses*

Question	Scale
At the time that you identified the person in the photospread, how certain were you that the person you identified from the photos was the gunman that you saw in the video?	0% ( <i>not at all certain</i> ) to 100% ( <i>totally certain</i> ), in 10% intervals
How good of a view did you get of the gunman?	1 ( <i>very poor</i> ) to 7 ( <i>very good</i> )
How long would you estimate that the gunman’s face was in view during the video?	1 ( <i>very little time</i> ) to 7 ( <i>quite a bit of time</i> )
How well were you able to make out specific features of the gunman’s face from the video?	1 ( <i>not at all</i> ) to 7 ( <i>very well</i> )
How far away was the gunman?	1 ( <i>not far</i> ) to 7 ( <i>very far</i> )
How much attention were you paying to the gunman’s face while viewing the video?	1 ( <i>none</i> ) to 7 ( <i>my total attention</i> )
To what extent do you feel that you had a good basis (enough information) to make an identification?	1 ( <i>no basis at all</i> ) to 7 ( <i>a very good basis</i> )
How easy or difficult was it for you to figure out which person in the photos was the gunman?	1 ( <i>extremely easy</i> ) to 7 ( <i>extremely difficult</i> )
After you were first shown the photos, how long do you estimate it took you to make an identification?	1 ( <i>I needed almost no time to pick him out</i> ) to 7 ( <i>I had to look at the photos for a long time to pick him out</i> )
On the basis of your memory of the gunman, how willing would you be to testify in court that the person you identified was the person in the video?	1 ( <i>not at all willing</i> ) to 7 ( <i>totally willing</i> )
Generally, how good is your recognition memory for the faces of strangers you have encountered on only one prior occasion?	1 ( <i>very poor</i> ) to 7 ( <i>excellent</i> )
How clear is the image you have in your memory of the gunman you saw in the video?	1 ( <i>not at all clear</i> ) to 7 ( <i>very clear</i> )
Which of the following statements best describes how you went about trying to identify the gunman from the five photos? (circle one)	Choices: “the gunman’s photo just ‘popped out’ at me and I recognized it immediately” versus “I used a process of elimination, deciding which photos were <i>not</i> of the gunman before deciding which photo must be that of the gunman”

In the *no-thought/no-feedback* condition, the experimenter waited 6 min after the identification, reentered the cubicle, and gave the eyewitness the question sheets. In the *no-thought/confirming-feedback* condition, the experimenter waited 3 min and reentered the cubicle saying, "Oh, good. I noticed on your identification sheet that you identified the actual murder suspect." The experimenter then left and returned 3 min later with the question sheets. In the *prior-thought/no-feedback* condition, the experimenter reentered the cubicle after the identification and gave the eyewitness written instructions asking participants to spend time thinking privately about how clearly they could see the gunman's face in the video, how much they focused on the gunman's face, how easy it was for them to select someone from the photo spread, how good they are at remembering faces, and how sure they were that they identified the right person in the photo spread. The experimenter reentered after 6 min to give the participant the question sheets. In the *prior-thought/confirming-feedback* condition, the experimenter reentered the cubicle after the identification and gave the eyewitness the written "think instructions." After 3 min, the experimenter reentered the cubicle, gave the confirming feedback, and exited. After another 3 min, the experimenter reentered with the question sheets. In the *subsequent-thought/confirming-feedback* condition, the experimenter reentered the cubicle after the identification, gave confirming feedback, and exited. The experimenter reentered the cubicle 3 min later and gave the eyewitness the written think instructions. After another 3 min, the experimenter reentered the cubicle with the question sheets.

Participants in all conditions were left alone to answer the question sheets.

## RESULTS

As expected, most of the measures were correlated with each other (see Table 2). Nevertheless, it is conceptually important to know whether the feedback manipulation had an effect on each of these measures. Clearly, it is possible for feedback to affect confidence without affecting, for example, the eyewitnesses' recollections of how good their view was. Hence, each measure was analyzed with a separate 2 (confirming feedback or not)  $\times$  2 (prior thought or not) analysis of variance. This allowed us to test whether the feedback effect was present for each measure and also whether the prior-thought manipulation moderated the feedback effect. When the interaction was significant, simple *t* tests were used to examine the feedback effect for the prior-thought conditions and for the no-thought conditions. Then, the subsequent-thought/confirming-feedback condition was compared with the no-thought/confirming-feedback condition to see if subsequent thought moderated the effects of confirming feedback. All tests, except as otherwise noted, were two-tailed, with a criterion alpha level of .05 for ascribing statistical significance.

### Confidence

Prior thought served to moderate the effect of feedback on eyewitnesses' recollections of their confidence, as evidenced by a significant 2 (confirming feedback or not)  $\times$  2 (prior thought or not) interaction,  $F(1, 146) = 7.12, p < .01$ . Mean confidence by condition is shown in Figure 1, along with 95% confidence intervals around the means. The moderation pattern was as predicted; that is, a large effect of feedback in the no-thought condition,  $t(59) = 4.7, p < .001, d = .95$ , was elimi-

nated in the prior-thought condition,  $t(59) = 0.62, n.s., d = .12$ . The subsequent-thought/confirming-feedback condition, however, did not differ from the no-thought/confirming-feedback condition, indicating that subsequent thought did not moderate the effects of confirming feedback,  $t(59) = 0.4, n.s$ . In addition, the prior-thought/no-feedback condition yielded significantly more confidence than did the no-thought/no-feedback condition, indicating that prior thought alone produces confidence inflation,  $t(59) = 2.05, p < .05$ .

### Other Measures

Nine of the other 12 measures yielded significant 2 (confirming feedback or not)  $\times$  2 (prior thought or not) interactions, all  $F_s(1, 116) > 4.0, p_s < .05$ . The only 3 measures that failed to yield the interaction were clarity of image, estimated distance of the gunman, and length of time the gunman was in view. Note, however, that the latter two measures also failed to show simple effects of feedback for the no-thought conditions,  $t_s(59) < 1.5, p_s > .05$ , making them poor tests of the moderation hypothesis. Further, these two measures have consistently failed to show the feedback effect in prior studies (Wells & Bradfield, 1998).

For the nine measures that were affected by the feedback manipulation, Figure 2 shows difference scores between the confirming-feedback and no-feedback conditions, for the prior-thought and no-thought conditions separately. (Scoring was reversed for the ease-of-identification and speed-of-identification measures.) As predicted, moderation consistently took the form of lessening the effect of feedback in the prior-thought conditions; the average effect size in the no-thought conditions was  $d = .60$ , and the average effect size in the prior-thought conditions was  $d = .20$ . Three of the measures—goodness of view, ease of identification, and speed of identification—also showed moderation effects in the subsequent-thought condition, as evidenced by significantly lower means in the subsequent-thought/confirming-feedback condition than in the no-thought/confirming-feedback condition,  $t_s(59) = 2.17, 2.29, \text{ and } 3.42$ , respectively,  $p_s < .05$ .

Although the confidence measure showed differences between the no-thought/no-feedback condition and the prior-thought/no-feedback condition, none of the other 12 measures did, all  $t_s(59) < 1.6$ . Prior thought alone apparently did not affect witnesses' answers to these other questions. Unlike the prior-thought manipulation, the subsequent-thought manipulation was ineffective in moderating the feedback effect, as evidenced by nonsignificant differences between the no-thought/confirming-feedback condition and the subsequent-thought/confirming-feedback condition for all 12 measures, all  $t_s(59) < 1.6, p_s > .05$ .

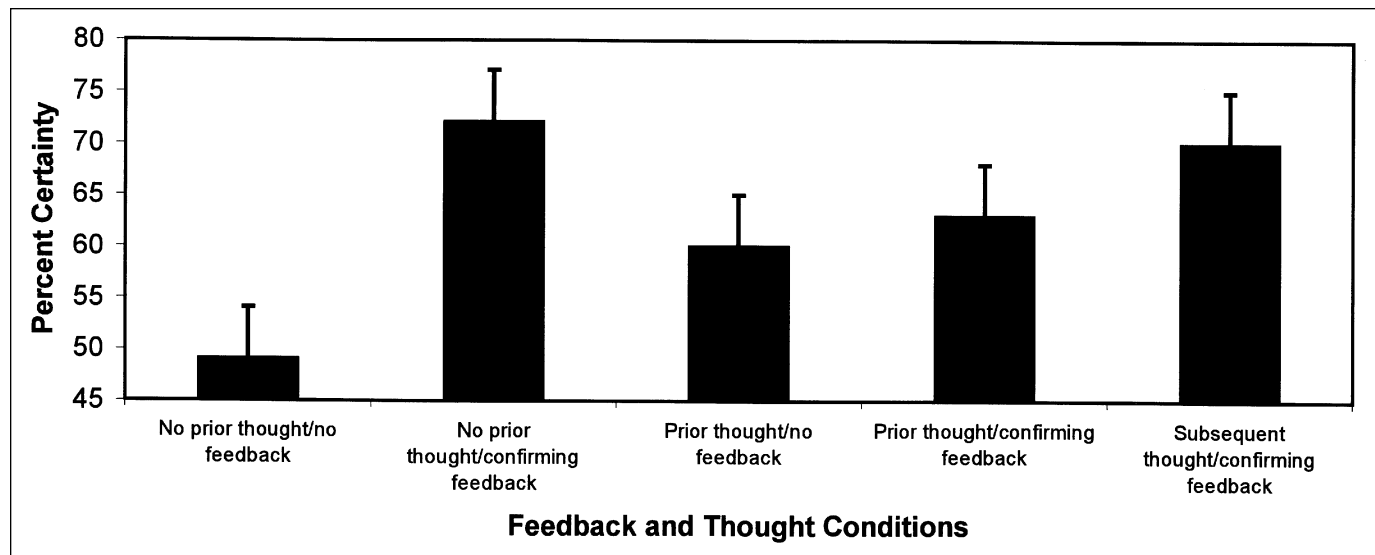
One measure not shown in Figure 2 (because it is not on a similar measurement scale) is the percentage of eyewitnesses who reported that the culprit's face just "popped out" in the lineup. Overall, only 17% reported the pop-out process of identification, and the expected frequencies were too small to analyze each condition separately. However, contrasting the three confirming-feedback conditions to the two no-feedback conditions indicated a significant one-tailed difference: Pop-out was reported by only 9% of the no-feedback eyewitnesses versus 23% of the confirming-feedback eyewitnesses,  $\chi^2(1, N = 150) = 2.97, p < .01$ , one-tailed.

## DISCUSSION

Confirming feedback following eyewitnesses' false identifications had very strong inflation effects on their recollections of how

**Table 2.** *Correlations among measures*

	Goodness of view	Time face was in view	Details of face	Distance from gunman	Amount of attention	Basis for identification	Ease of identification	Speed of identification	Willingness to testify	Ability to identify strangers	Clarity of memory image	Process of identification
Certainty	.66	.22	.51	.09	.29	.76	.69	.41	.64	.36	.66	.31
Goodness of view		.38	.58	-.01	.30	.72	.49	.14	.61	.27	.55	.19
Time face was in view			.39	-.07	.11	.39	.14	-.04	.18	.03	.10	.07
Details of face				-.06	.21	.63	.41	.18	.54	.30	.44	.16
Distance from gunman					.08	.00	-.04	.02	.04	-.01	.03	.05
Amount of attention						.29	.33	.22	.23	.21	.27	.18
Basis for identification							.62	.31	.72	.38	.63	.22
Ease of identification								.63	.59	.29	.57	.42
Speed of identification									.30	.21	.27	.49
Willingness to testify										.28	.55	.17
Ability to identify strangers												.18
Clarity of memory image												.22



**Fig. 1.** Eyewitnesses' recollections of how certain they were as a function of feedback and thought manipulations, with 95% confidence intervals.

confident they were at the time of their identification. Feedback also distorted eyewitnesses' recollections of other testimony-relevant characteristics of the witnessed event and their recollections of the identification experience. The results are consistent with the contention that such effects occur because of the relative absence of memorial access to premanipulation thoughts on these variables: Eyewitnesses who were instructed to think about these variables prior to the feedback manipulation were largely unaffected by the manipulation, whereas eyewitnesses who were not instructed to think about these variables were strongly affected by the manipulation. In addition, for most of the measures, instructions to think about these variables after the feedback manipulation did not moderate the feedback effect. The latter finding indicates that thought about these variables per se does not inoculate against the feedback effect.

It is tempting to interpret the postidentification-feedback effect as a type of hindsight bias in which, having been told the "correct" answer, eyewitnesses assume that they "knew it all along" (Fischhoff, 1975). We are reluctant, however, to consider the feedback effect to be a traditional hindsight effect. Although confidence inflation from feedback seems consistent with the hindsight bias, it is unclear how the other measures (e.g., amount of attention, goodness of view) can be construed as hindsight effects in the traditional sense. For instance, after receiving confirming feedback, why should eyewitnesses think that they paid more attention to the culprit's face? Why should they recall their view as having been better? Why should they be more likely to recall that the culprit's face just "popped out" while they viewed the lineup? Although we suspect that these effects are related to the hindsight bias, it appears that feedback effects on these other measures involve an inference process of some type (e.g., "I must have been paying attention"; "I must have had a good view"; "It must have just 'popped out'"). Having no premanipulation recollection of these qualities of their witnessing experience, eyewitnesses seem to infer these qualities from the feedback.

We believe that these effects are better construed as self-perception effects. According to self-perception theory (Bem, 1967), people infer

their beliefs or feelings from their behavior in the context in which the behavior occurs, much as an outside observer would. The "outside observer" test is one of the critical features of self-perception theory, and it seems to fit the behaviors of eyewitnesses in this work. For instance, an outside observer who believed that an eyewitness made an accurate identification would likely infer that the eyewitness was more confident, had a better view, made the identification more quickly, and so on, compared with an outside observer who believed that the eyewitness had made a false identification. Furthermore, self-perception theory states that this inference-as-thought-observer process occurs only to the extent that internal cues are weak. The prior-thought manipulation was designed to strengthen internal cues (creation of a prefeedback memory), and, as predicted, inferences from the feedback were muted when prior thought was introduced.

Somewhat surprisingly, merely thinking about one's confidence, view, and so on, itself seems to produce confidence inflation. We call this the thought-alone effect because the thought instruction itself does not suggest anything about the accuracy of the identification. The size of this effect was about half the size of the feedback effect. The thought-alone effect, however, seems qualitatively different from the feedback effect because, unlike the feedback effect, it appears to be restricted to confidence judgments, rather than spreading to the other judgments. Although we did not explicitly predict confidence inflation for thought alone, other studies have found that eyewitnesses' confidence increases when they are instructed to prepare themselves for cross-examination (Wells, Ferguson, & Lindsay, 1981) or when they answer the same question repeatedly (Shaw, 1996; Shaw & McClure, 1996).

The function of a lineup is to find out what the eyewitness knows from his or her own memory, independently of any influences from the agent administering the lineup. There are no legal prohibitions in the United States against lineup agents giving feedback to eyewitnesses. To the extent that feedback is a relatively normal practice in real cases, significant percentages of eyewitnesses who make false identifications are being "shifted up" in the confidence distribution in

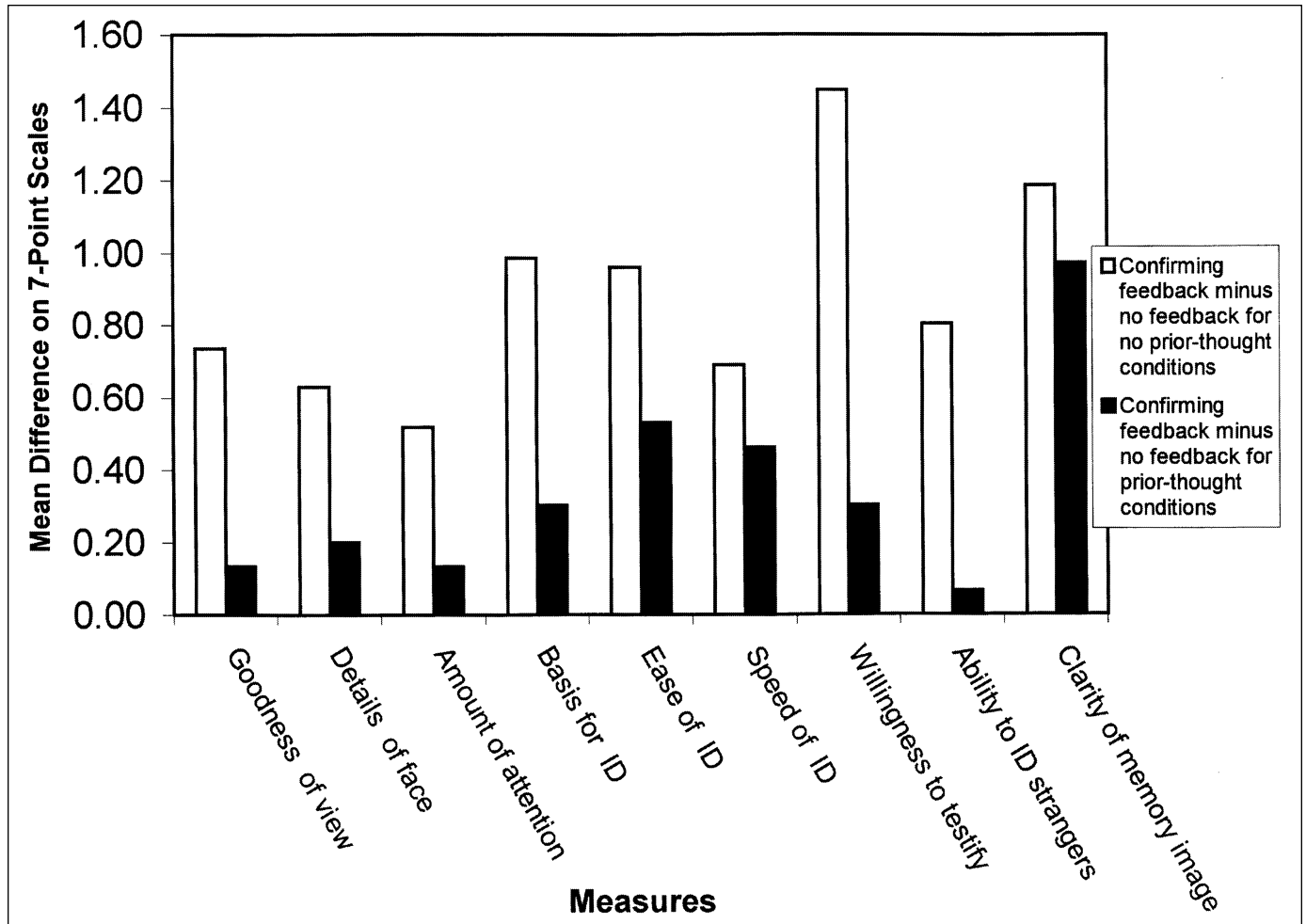


Fig. 2. Mean differences between confirming-feedback and no-feedback conditions for nine measures.

ways that confound the meaning of high confidence. It is difficult enough for triers of fact to distinguish between accurate and false identification testimony without confounding matters with postidentification feedback (see Wells et al., 1979). Feedback contributes additional muddle to an already-confusing set of cues that jurors use in trying to discriminate between accurate and false identification testimony.

The solution to preventing feedback is apparent from the argument (Wells & Luus, 1990) that a properly conducted lineup is like a properly conducted scientific experiment. The legal system should require blind testing (the lineup agent should not know which person in the lineup is the suspect) and collect the primary dependent measures (confidence information and other statements) from the eyewitnesses prior to debriefing them regarding the "status" of the identified person.

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(RECEIVED 1/25/98; ACCEPTED 4/2/98)