The Effects of Post-Identification Feedback and Age on Retrospective Eyewitness Memory

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SUMMARY

Two studies examined the effects of post-identification feedback, age, and retention interval on participants’ memories and beliefs about memories for a videotaped event, as captured by a store surveillance camera. After viewing the video, they were then asked to identify the suspect from a target-absent photo line-up. After making their identification, some participants were given information suggesting that their identification was correct, while others were given no information about the accuracy of their identification. In both experiments participants who received confirming feedback indicated they were more confident in their identification, paid more attention to the video, and that they were more willing to testify in court than those who received no feedback. The confidence inflation effects of post-identification feedback did not vary with retention interval or age. These results are consistent with a position focusing on accessibility, which suggests that witnesses have little or no retrievable recollection of how sure they were at the time of their identification. Copyright © 2005 John Wiley & Sons, Ltd.

In the course of a criminal trial, eyewitness identification testimony can be very persuasive evidence against a defendant (e.g. Cutler, Penrod, & Dexter, 1990; Fox & Walters, 1986; Wells, Ferguson, & Lindsay, 1981). Although the law makes no distinction between the relative weight juries should give to direct evidence as opposed to circumstantial evidence (United States v. Ramirez-Rodriguez, 1977), eyewitness testimony is one of the most commonly employed forms of direct evidence presented in court and is often more persuasive to juries than circumstantial evidence (Bergman, 1996; Dorf, 2001; Kaci, 1995). This is problematic since eyewitness identification is frequently inaccurate (Dunning & Stern, 1994; Rattner, 1988; Wells, 1993; Wells & Bradfield, 1999; Wells

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et al., 1998). The recent use of DNA evidence has led to the discovery of many wrongful convictions; in over 75% of these cases, the major evidence was mistaken eyewitness identification (Scheck, Neufeld, & Dwyer, 2000; Wells, Olson, & Charman, 2003).

The problem of inaccurate eyewitnesses is compounded by two important facts. First, research has consistently demonstrated that participant jurors are especially willing to accept eyewitness identification testimony when the eyewitness is confident about the identification (e.g. Cutler et al., 1990; Fox & Walters, 1986; Wells et al., 1981). Second, research shows that the person administering the line-up can influence witnesses’ recollections of how confident they were when they made their identification (Wells & Bradfield, 1998). Taken together, these two facts indicate that line-up administrators can create confident eyewitnesses who are likely to be believed by jurors. Moreover, this can occur independently of the accuracy of the eyewitness (see Sporer, Penrod, Read, & Cutler, 1995 for a review).

Since eyewitness identification evidence, including positive identifications, is one of the most compelling and convincing forms of evidence, yet is often extremely unreliable, there is a vital need to investigate factors that may have an impact either prior to and/or subsequent to eyewitness identification. Our goal in this paper is to examine one such subsequent issue, post-identification feedback, which has been shown to influence the memory reports of young adult eyewitness (Bradfield, Wells, & Olson, 2002; Wells & Bradfield, 1998). More specifically, we are interested in how post-identification feedback affects the memory reports for both young and older eyewitnesses.

Post-identification feedback refers to the information that is given to the eyewitness after the identification is made. For example, a line-up administrator typically knows who the suspect is and therefore could give, possibly inadvertently, the witness information about the ‘accuracy’ of his or her identification. The importance of this issue is underscored by the fact that the National Institute of Justice (Technical Working Group for Eyewitness Evidence, 1999) has published a new set of guidelines for line-up administrators. One of their suggestions is to limit the information given to the eyewitness subsequent to the identification.

In the post-identification feedback studies (Wells et al., 2003; Wells & Bradfield, 1998, 1999), participants watch a security camera video and then attempt to identify one of the people seen in the video from a line-up. To make this task forensically relevant, it is revealed just prior to making the identification that this person was the suspect in a crime. The line-up was constructed such that it was suspect-absent, making it impossible for participant witnesses to select the actual perpetrator, guaranteeing inaccurate identifications. After participants make their identification, the line-up administrator, who presumably knows the identity of the suspect, gave the participant one of three types of feedback. More specifically, they were told that they chose the correct person from the line-up, that they made a mistake, or they were given no feedback. Following the feedback manipulation, participants were asked to answer a series of testimony-relevant questions including how confident they were in their selection, how good was their view of the suspect, how much attention was paid to the video, and paid more attention to the video than do no-feedback control participants (Wells & Bradfield, 1998, 1999; Wells et al., 2003).
Wells and colleagues (Bradfield et al., 2002; Luus & Wells, 1994; Wells & Bradfield, 1998, 1999) have conclusively demonstrated the post-identification feedback effect for college-aged eyewitnesses. It is important to know if these effects will be similar with different age groups. To our knowledge, no published research has examined these effects with senior citizens. It is meaningful to look at the effects of post-identification feedback on seniors for several reasons. First, older adults constitute a considerable proportion of the population. According to the 2000 US census, nearly 35 million Americans are age 65 or older, with those over the age of 85 representing the fastest growing population. Furthermore, that number is expected to double by 2030. Second, it is reasonable to assume that elder adults have significant involvement in the criminal justice system. According to the US Bureau of Statistics (1997, as cited in Searcy, Bartlett, Memon, & Swanson, 2001), many seniors who are victims of crimes are likely to have had a personal encounter with the assailant. This fact makes senior eyewitnesses quite likely to be involved with line-up identifications. Thus, there are practical reasons to conduct post-identification feedback research with older adults.

While it is apparent that elder adults are an important population on whom eyewitness identification research should be conducted, it is unclear how post-identification feedback will affect senior eyewitnesses, which makes it theoretically intriguing. On the one hand, both the misleading post-event information (MPI) (Cohen & Faulkner, 1989; Karpel, Hoyer, & Toglia, 2001; Loftus, Levidow, & Deunsing, 1992) and line-up identification (Searcy et al., 2001; Searcy, Bartlett, & Memon, 1999, 2000; Yarmey, 1993) literatures seem to suggest that post-identification feedback should be more harmful to seniors than to young adult eyewitnesses. This evidence is consistent with trace strength hypothesis (Baddeley, 1998; Brainerd & Reyna, 1988; Ceci, Ross, & Toglia, 1987; Reisberg, 2001), which predicts that post-identification feedback, a form of misleading information, should have its strongest effect when memory traces are weakest, as would be the case with elderly participants (Karpel et al., 2001). Because older participants remember event details less accurately even on immediate retention tests, their initial encoding of such details is presumably less complete than younger adults so that older, compared to younger, adults have weaker memory traces to begin with. However, it is worth noting that several studies have shown that older adults, compared to young adults, demonstrate impaired memory for the original event, yet are not more suggestible (e.g. Bornstein, Witt, Cherry, & Greene, 2000; Coxon & Valentine, 1997). Conversely, Wells et al. (2003) argued for what we will term the ‘accessibility hypothesis’ which predicts that age should not moderate the magnitude of the post-identification feedback effect. This is because after the passage of time people cannot directly retrieve information concerning the qualities of their memory (e.g. confidence, view, suspect’s face) at the time they made the identification.

In the MPI procedure, participants view a staged event, receive either neutral or misleading information about something in the original event, and then their memory is tested (Loftus, Miller, & Burns, 1978). It has been repeatedly demonstrated that elderly adults are more suggestible than younger adults when the MPI procedure is employed (Cohen & Faulkner, 1989; Karpel et al., 2001; Loftus et al., 1992). It is not surprising that seniors are more suggestible, given that they have also been found to perform worse on source attribution tasks (McIntyre & Craik, 1987; Mitchell, Johnson, & Mather, 2003). Source attribution tasks have been cited as important predictors in resisting suggestion (Mitchell et al., 2003). If elder adults are more susceptible to suggestion than young adults, then it is plausible that post-identification feedback, akin to a post-event suggestion, could have a greater misleading influence on elder adults.
There is also a growing literature that demonstrates that elderly eyewitnesses are more likely than younger witnesses to make identification errors after viewing an event (Searcy et al., 1999, 2000, 2001). In fact, recent laboratory research has shown that elderly adults make 25–50% more errors on identification tasks than younger adults (Searcy et al., 1999, 2000); these errors tend to be exacerbated as the retention interval increases (Searcy et al., 2001). These findings suggest that internal memory records are already weakened when elderly participants make line-up identifications immediately, which signals greater difficulty with the passage of time (as memory traces fade progressively with delay). The weaker the memory trace, the greater the susceptibility to suggestion—a phenomenon consistent with the trace strength hypothesis.

The trace strength hypothesis predicts that elderly people will be more influenced by post-identification feedback than younger adults. The weaker memory traces of elder adults, caused by either inadequate encoding or rapid forgetting, may be more susceptible to influence from external or outside forces (Brainerd & Reyna, 1988). Similarly, Wells et al. (2003) argued that participant witnesses may rely on external cues (i.e. information given by the line-up administrator) when the internal memory record is weak. Therefore, it follows that confirming post-identification feedback should have a greater influence on older adults than younger adults because older eyewitnesses tend to have a worse memory for the original events (Karpel et al., 2001; Searcy et al., 1999, 2000).

Alternatively, it is possible that the post-identification feedback effect will not vary with age. The accessibility hypothesis (Wells et al., 2003) posits that participant witnesses have little or no memory of how confident they were at the time they made the identification. Since they do not make online judgments of their confidence, view, attention, and so forth, they are forced to infer how they felt when they made their identification, based on what is still retrievable from memory. Participants who receive feedback (i.e. ‘Good. You identified the actual suspect.’) should use this information to infer their confidence and other judgments about memory. Furthermore, both groups should be similarly influenced by the post-identification feedback, to the extent they can retrieve it. In other words, if both age groups cannot retrieve information regarding the qualities of their memories at the time they answer the post-identification questions (i.e. following the confirming or no feedback), then they have to infer those qualities and the effect of positive feedback should be the same for both groups.

There is also empirical support for the predictions of the accessibility hypothesis. Wells et al. (2003) reported no interaction between retention interval and post-identification feedback. This null result is consistent with the accessibility hypothesis, which would assume that delaying either the feedback or the assessment of confidence should not affect the magnitude of the post-identification feedback effect because all the answers must be reconstructed at the time the measures are taken. Furthermore, other researchers have similarly suggested that retrospective judgments are based on the information that is most accessible at the time such judgments are made (Sanna, Schwarz, & Stoker, 2002; Schwarz, 1995).

Within the context of the goals noted earlier, the present experiments were designed to test the two theoretical accounts that make opposing predictions about the interaction of post-identification feedback and age. The trace strength hypothesis (Brainerd & Reyna, 1988) predicts that post-identification feedback should have its greatest effect when the memory traces of the events in the video and the original line-up identification are weak. Since memory declines with age, memory traces are weaker for elder adults and, therefore, the magnitude of the effect was predicted to be greater for them than for younger adults.
Thus, according to the trace strength hypothesis, we should expect to find an Age x Feedback interaction. In contrast, a memory accessibility hypothesis (Wells et al., 2003) predicts that eyewitnesses, regardless of their age, should have similar recollections regarding the quality of their memory judgments, because they form no opinions at the time of the identification. They are forced to infer this information at the time they are questioned. Because both groups make these judgments at the time of the assessment, they should be similarly affected by the feedback. Therefore, in the present study, if the accessibility hypothesis is correct, no significant Age x Feedback interactions should be observed.

**EXPERIMENT 1**

**Method**

**Participants**
A total of 60 volunteer senior participants were recruited from local churches, retirement communities, and senior citizen organizations for participation in the study. For the young adult sample, 60 participants were recruited from Introductory Psychology and Statistics courses at the University of Alabama in Huntsville. The young adults participated as partial fulfillment of a course requirement for experimental participation or library research. The mean age of the young adults was 19 years (range = 17–32). Education level for young adults ranged from freshmen to seniors in college (M = 14 years, SD = 1.42). The mean age for the elder adults was 74.5 years (range = 59–97) and the mean education level was 14 years (SD = 2.87). There were 29 participants in each condition, except for the young adult confirming feedback condition, which had 30 participants. There were originally 30 participants in all conditions, but two young adult participants were dropped from the analysis for failure to follow directions; the data from one elderly participant were eliminated, because he indicated that he had poor vision and was due to have cataract surgery soon after the study. All participants were treated in accordance with the ethical principles of the American Psychological Association.

**Design**
The experiment was a 2 (Feedback: Confirming Feedback vs. No Feedback) × 2 (Age: Elder Adult vs. Young Adult) randomized, between-participants factorial design. The dependent measures were derived from participant's responses to a memory questionnaire administered after the identification phase of the study. The questionnaire was given on an immediate basis and contained 16 questions used by Wells and Bradfield (1998) that measured each participant’s attitude about his or her identification and the video event. These questions included ones for which the participants evaluated certainty of their identification, their view of the gunman, the number of seconds the gunman was in view, the camera’s distance from the gunman, their attention paid to the gunman, the basis for their identification, their ease of identification, and their willingness to testify (see Appendix 1 for the full questionnaire; please note that most questions were answered on a 1–7 scale.)

**Materials and procedure**
Participants responded to four pre-study questions providing their date of birth, years of formal education and information about their general health and corrected vision on a
scale of 1 to 4 (1 = excellent; 2 = good; 3 = fair; 4 = poor). For younger adults, the mean general health rating was $M = 1.63$ ($SD = 0.61$) and the mean corrected vision rating was $M = 1.74$ ($SD = 0.68$). For seniors, the mean general health rating was $M = 2.15$ ($SD = 0.79$), and the mean corrected vision rating was $M = 2.03$ ($SD = 0.67$). On a post study basis participants completed the Digit Forward, Digit Backward, and the Digit Symbol Coding test from the Weschler Adult Intelligence Scale—Revised (WAIS-R; Weschler, 1981).

In conducting the experiment, we employed a video, a photo spread line-up, and the eyewitness questionnaire previously used for post-identification feedback research by Wells and Bradfield (1998). The video, the same used by Wells and Bradfield (1998), is a grainy, 3-min clip from a department store security camera. It shows a woman working behind a counter and customers walking into the store. This beginning segment was shown to participants in order to familiarize them with the grainy video quality. The clip then stops and restarts, showing the gunman in slow motion for 8 s. The participants do not see the shooting; the clip only shows the gunman from the waist up walking past the store. Next, the participants viewed a suspect-absent photo spread composed of five men. The photo spread is identical to the six-man line-up used in the actual case, except for the absence of the true gunman. The men in the line-up were represented by pairs of coloured photographs showing both a front view and side view of their faces. The pairs of photos were arranged in two rows on a sheet of paper such that three pairs appeared in the top row and two in the second row. An answer sheet, containing five empty boxes arranged in the same manner, was used to obtain participants’ identification responses. Subsequently, an eyewitness questionnaire was given to measure qualities of the witnessing experience such as certainty, view, willingness to testify, and so forth (see Appendix 1).

Upon arrival for the experiment, participants were assigned an individual experimenter and then given the pre-study questions to obtain general information about their age, amount of formal education, general health, and corrected vision. Then in small groups up to five they were told that the experiment involved people’s first impressions of others and their ability to form judgments about others, such as judgments about personality. Specifically, participants were told that they would see a video clip from a store security camera. They were encouraged to watch closely so that they would be able to answer subsequent personality questions about the video. Participants were told to pay special attention to the person (i.e. the person they later learn was the gunman) appearing after the tape stopped and began again in slow motion.

After viewing the video, the participants met once again individually with their experimenter who informed them that this was actually an eyewitness memory study and that they were witnesses to the identity of the man shown at the end of the clip. They were also told that this man shot and killed the store security guard, that the police had arrested a suspect who was in the line-up, and that they were to pick him out of the line-up. At this point, the participants were administered the identification task as an experimenter placed a five-box answer sheet and a copy of the photo spread in front of them and asked them to place an ‘X’ in the box that represented their choice of the gunman. If anyone experienced difficulty making a choice, the experimenter said, ‘just do your best’ and did not mention the alternative of declining to choose. Virtually everyone made a choice within 10 s.

Then, on a random basis, participants received one of the two types of feedback: confirming or no feedback. Those in the confirming feedback condition were told, ‘Good. You identified the actual suspect.’ Participants in the no feedback condition were not given
any feedback regarding their identification. Everyone then answered one personality
question. Next, the participants completed the 16-item eyewitness questionnaire about the
quality of his/her witnessing experience. The participants were told that these were the
types of questions that a police officer or lawyer might ask.

After completing the questionnaire, participants were given instructions and completed
the WAIS-R (Weschler, 1981) Digit Span Test. The Digit Span consists of two verbal tests:
Digits Forward and Digits Backwards. The Digit Span test was employed as a test of
attention, short-term memory, and working memory. On these tasks, the experimenter read
 aloud to each participant a number of digits at 1-s intervals. Participants repeated the digits
to the experimenter in first-to-last order for the forward trials and from last-to-first order
for the backwards trials. Sequence size increased progressively from two to nine digits
until the participant failed both trials of a particular span in the forward task. In the digit
backward task sequences increased from two to eight digits. On the digits forward task,
participants in the positive feedback condition scored a mean of 6.84 digits, and those in
the no feedback condition scored a mean of 6.54 digits. The means scores for younger and
older adults were 6.96 and 6.45 digits, respectively. On the digit backward task,
participants in the positive feedback condition scored a mean of 4.74 digits, and those
in the no feedback condition scored a mean of 4.81 digits. The mean scores for younger
and older adults were 4.79 and 4.83 digits, respectively. There were no significant effects
for either age or feedback condition for either the forward or backward tests.

To determine processing speed, participants then completed the written WAIS-R Digit
Symbol Coding Task utilizing a key of nine symbol-digit pairs where the symbol is in the
top box and the corresponding number is in the lower box. Participants are instructed to fill
in the appropriate number which corresponds to the supplied symbol, completing as many
of the 90 substitutions within the time limit of 90s. For all participants in the positive
feedback condition the mean was 51.15 boxes; while in the no feedback condition, the
mean was 52.49 boxes. Within age groups, there were no differences between the feedback
conditions. However, the mean substitution score for younger adults \((M = 64.20)\) was
greater than that for older adults \((M = 39.89)\), \(F(1, 113) = 104.07, MSE = 165.67, p < 0.05\). Despite this difference, none of the results reported below were qualified
when this WAIS score was employed as a covariate; therefore, we do mention this
difference any further Participants were then thanked and debriefed.

Results and discussion

As can be seen in Table 1, confirming post-identification feedback increased both young
and older adult participants’ ratings on almost every measure, including certainty, how
good a view they had, and the amount of attention paid to the video. This replicates the
post-identification feedback effect that previously has been reported for younger adults by
Wells and associates (Bradfield et al., 2002; Wells & Bradfield, 1998) and extends it to
everly witnesses. Inspection of the table reveals that the effect of post-identification
information does not seem to vary with age, an outcome consistent with the accessibility
hypothesis (Wells et al., 2003). There does appear to be a small overall effect of age,
however, as the post-identification ratings were consistently higher for younger adults than
they were for older adults.

Consistent with Wells and Bradfield (1998), all participants chose someone from the
target-absent line-up. Since there was no correct choice, a Chi-square test was performed
to determine if there was any bias in the selection process. If there was no tendency to
select a particular person from the five photo pairs, then one would expect choices to be evenly distributed or about a 20% ($n = 23.4$) choice rate for each suspect. In fact, the distribution was not spread out uniformly, as suspect #1 was chosen 20 times, while #2 was selected by 13 participants, #3 by 65 subjects, #4 by seven subjects, and suspect 5 only attracted 11 responses. The analysis confirmed biases in selection, $\chi^2(4) = 97.96$, $p < 0.001$. Thus, #3 was selected statistically more often by subjects in the present experiment. In Experiment 1 of Wells and Bradfield (1998), suspect 1 (which corresponds to line-up member 3 in the current study) was also selected most frequently.

Post-feedback questionnaire
Given that there were a large number of dependent measures, we first conducted a multivariate analysis of variance (MANOVA) using the 14 measures on the immediate questionnaire (question 15 was the identification decision question and question 16 was an estimate in seconds of how long the gunman was in view). The MANOVA returned significant results, $F(13, 99) = 3.133, p < 0.01$. In accordance with the analyses employed

### Table 1. Means and standard deviations as a function of feedback and age for experiment 1

<table>
<thead>
<tr>
<th>Feedback</th>
<th>Young</th>
<th>No feedback</th>
<th>Feedback</th>
<th>No feedback</th>
</tr>
</thead>
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<tr>
<td>Certainty</td>
<td>$M$</td>
<td>5.3$^a$</td>
<td>3.8</td>
<td>4.9$^a$</td>
</tr>
<tr>
<td></td>
<td>$SD$</td>
<td>1.2</td>
<td>1.3</td>
<td>1.7</td>
</tr>
<tr>
<td>View</td>
<td>$M$</td>
<td>4.1$^a$</td>
<td>3.2</td>
<td>4.3$^a$</td>
</tr>
<tr>
<td></td>
<td>$SD$</td>
<td>1.6</td>
<td>1.3</td>
<td>1.6</td>
</tr>
<tr>
<td>Face</td>
<td>$M$</td>
<td>4.1$^a$</td>
<td>3.0</td>
<td>3.9$^a$</td>
</tr>
<tr>
<td></td>
<td>$SD$</td>
<td>1.5</td>
<td>1.2</td>
<td>1.8</td>
</tr>
<tr>
<td>Distance</td>
<td>$M$</td>
<td>2.9</td>
<td>2.9</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>$SD$</td>
<td>1.7</td>
<td>1.2</td>
<td>2.0</td>
</tr>
<tr>
<td>Attention</td>
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<td>5.4</td>
<td>4.7</td>
<td>4.9$^a$</td>
</tr>
<tr>
<td></td>
<td>$SD$</td>
<td>1.5</td>
<td>1.6</td>
<td>2.1</td>
</tr>
<tr>
<td>Basis</td>
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<td>4.8$^a$</td>
<td>3.3</td>
<td>4.2$^a$</td>
</tr>
<tr>
<td></td>
<td>$SD$</td>
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<td>1.4</td>
<td>1.7</td>
</tr>
<tr>
<td>Ease</td>
<td>$M$</td>
<td>3.4$^a$</td>
<td>4.6</td>
<td>3.9</td>
</tr>
<tr>
<td></td>
<td>$SD$</td>
<td>1.4</td>
<td>1.8</td>
<td>1.9</td>
</tr>
<tr>
<td>Time</td>
<td>$M$</td>
<td>3.0$^b$</td>
<td>3.9</td>
<td>3.1$^a$</td>
</tr>
<tr>
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<td>1.6</td>
<td>1.7</td>
</tr>
<tr>
<td>Testify</td>
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<td>2.8</td>
<td>4.2$^a$</td>
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<td>1.6</td>
<td>2.3</td>
</tr>
<tr>
<td>Trusted</td>
<td>$M$</td>
<td>4.9$^a$</td>
<td>3.5</td>
<td>3.7$^b$</td>
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<td></td>
<td>$SD$</td>
<td>1.3</td>
<td>1.3</td>
<td>2.0</td>
</tr>
<tr>
<td>Memory</td>
<td>$M$</td>
<td>5.4$^a$</td>
<td>4.6</td>
<td>4.4$^a$</td>
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<tr>
<td>Sure</td>
<td>$M$</td>
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<tr>
<td></td>
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<td>1.5</td>
<td>1.3</td>
<td>1.8</td>
</tr>
<tr>
<td>See</td>
<td>$M$</td>
<td>4.1$^a$</td>
<td>3.0</td>
<td>4.1$^a$</td>
</tr>
<tr>
<td></td>
<td>$SD$</td>
<td>1.6</td>
<td>1.3</td>
<td>2.1</td>
</tr>
<tr>
<td>Clarity</td>
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<td>4.5$^a$</td>
<td>3.8</td>
<td>4.0$^a$</td>
</tr>
<tr>
<td></td>
<td>$SD$</td>
<td>1.4</td>
<td>1.6</td>
<td>1.8</td>
</tr>
<tr>
<td>Seconds in view</td>
<td>$M$</td>
<td>12</td>
<td>14</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>$SD$</td>
<td>11.1</td>
<td>14.9</td>
<td>7.8</td>
</tr>
</tbody>
</table>

Note: $^a$Significant from the no feedback condition at the 0.01 level; $^b$significant from the no feedback condition at the 0.05 level.
by Wells and Bradfield (1998), we followed up the multivariate analysis with univariate analyses on the 14 measures and then conducted planned contrasts to investigate the effect of confirming feedback for each age group. More specifically, we conducted 14 separate 2 (Feedback: Confirming Feedback vs. No Feedback) x 2 (Age: Elderly vs. Young Adult) analyses of variance (ANOVAs) on each of the questions on the post-identification questionnaire.

It is clear from Table 1 that confirming feedback had a robust and significant effect on participants’ memory beliefs for the suspect they had identified. The separate univariate ANOVAs conducted on the 14 primary measures revealed 12 significant effects at the \( p < 0.01 \) level of significance. Participants’ certainty can be used as an illustrative example of the post-identification feedback effect. That is, participants were more confident in their identifications when they were given confirming feedback (\( M = 5.15 \)), as opposed to when they were given no feedback (\( M = 3.45 \)), \( F(1, 113) = 38.51, \text{MSE} = 2.20, p < 0.01 \). Post-identification feedback had a similar effect on participants’ ratings of their view of the suspect, their ability to make out details of the face of the suspect, how much attention they paid to the video, their basis for making the identification, their willingness to testify, how much they trusted their identification, how good they rated their recognition memory, how sure they were of their identification, how well they could see the gunman, and clarity of the image in memory (all \( p \) values were less than 0.01 for each of these comparisons). It was also the case that participants claimed they found it significantly easier to choose the identity of the suspect from the suspect-absent line-up when they were given confirming feedback, \( F(1, 113) = 3.43, \text{MSE} = 3.43, p < 0.05 \). In summary, telling participant witnesses that they chose correctly during the identification task resulted in the belief that their memory for the video events was better and that they were trustworthy and believable witnesses. This occurred even though the all of the participants’ identifications were wrong.

The planned comparisons revealed the same consistent pattern of results as the univariate analyses. That is, when the feedback was compared for each age group individually for the 13 measures that were significant in the univariate analyses, all but two of the comparisons were significant at the \( p < 0.01 \) level. The estimate of the time it took to make the identification was significant at the \( p < 0.05 \) level for the younger adults. The ease with which older adults made their identifications was not significantly affected by the feedback manipulation, but the means were in the predicted direction. Furthermore, it is important to note that, consistent with the predictions of the accessibility hypothesis (Wells et al., 2003), there was no interaction between age and feedback on any of the measures.

These analyses also revealed several significant main effects of age. That is, younger adults gave significantly higher ratings than older adults for the questions regarding their certainty of the identification, the amount of attention that they paid to the gunman’s face, whether they thought that an eyewitness with a similar view would be a trustworthy eyewitness, how sure they were that they identified the suspect, and how clear the image was of the gunman in their mind. All these effects were significant at the 0.01 level, except for the certainty question, which was significant at the 0.05 level.

For question 15, that yielded dichotomous data regarding the strategy that participants employed to make their identifications, we conducted three separate 2 (Feedback: Confirming vs. None) x 2 (Response: The gunman’s photo just ‘popped out’ vs. ‘I used a process of elimination’) Chi-square analyses. These were on the overall data, the strategy selections of the elder adults participants, and the choice of strategies by the young participants. The analysis of the overall data, summing over the age variable, revealed a
significant effect of feedback $\chi^2 = (1, N = 116) = 6.34, p < 0.05$. The probability of a participant indicating that the gunman just popped out, conditioned upon having received feedback was 0.50; the probability of choosing this option given that they did not receive feedback was 0.16. Thus, participants were more likely to say that the gunman just ‘popped out’ if they were given confirming post-identification feedback than if given no feedback.

We also examined participants’ estimates of the time that the suspect was in view on the videotape. These estimates were affected by neither age nor feedback (see Table 1). The overall estimates were nearly identical for the confirming and no feedback conditions ($Ms = 11.65$ s and $11.40$ s, respectively). However, it is important to note that participants consistently overestimated the length of time that they viewed the suspect. On average, participants claimed that the suspect was in view nearly 50% longer than he actually was in view. This finding is noteworthy for two reasons. First, overestimation has been commonly reported in the literature (Loftus, Schooler, Boone, & Kline, 1987). Secondly, there has been some suggestion in the literature that viewing a crime for a longer time makes the witness seem more reliable to jurors and attorneys (Devenport, Penrod, & Cutler, 1997).

**EXPERIMENT 2**

The results of Experiment 1 are in line with the accessibility hypothesis. Although we assumed that memory strength would decay with age, we did not measure this directly and hence the trace strength hypothesis cannot be discounted. We addressed this issue in Experiment 2 by including a recognition memory task that participants completed after the witnessing experience questionnaire. The recognition test assessed participants’ memory of the video event, allowing for a more rigorous test of the trace strength hypothesis. That is, according to the trace strength hypothesis, if memory strength does vary with age, then we should see an interaction between feedback and age such that the elderly will show worse memory and greater feedback effects (Brainerd & Reyna, 1988; Wells et al., 2003) than will younger participants.

In addition to the memory test, we also added a week-long retention interval. There are a number of reasons why the interaction between age and retention interval are intriguing. First, the results may help to disentangle current theoretical explanations of the post-identification feedback effect. There is much empirical evidence to suggest that memory strength fades as time passes from the original event (Light, 1996), resulting in the accuracy of memory decreasing with time which is a result that experts have long agreed upon (Kassin, Tubb, Hosch, & Memon, 2001) The trace strength hypothesis predicts greater suggestibility or feedback effects when memory traces are weak (Brainerd & Reyna, 1988; Wells et al., 2003). Therefore, according to the trace strength account, there should be an interaction between retention interval and post-identification feedback, such that the feedback effects are greater after the longer retention interval. By contrast, the accessibility hypothesis predicts that participant witnesses have little or no memory of the experiential details of their memories at the time they made the identification. Since they do not make online judgments, they are forced to infer how they felt when they made their identification, based on what experiential information is still retrievable in memory. Therefore, there should be no interaction between retention interval and feedback (Wells et al., 2003).
Secondly, if there were large effects of post-identification feedback after long retention
intervals (i.e. several weeks), this would increase the generalizability of confidence
inflation in this paradigm. The effect has been investigated recently with a 2-day retention
interval (e.g. Wells et al., 2003), which is considerably shorter than the retention interval in
actual criminal cases. In real-life situations, much more time typically elapses between the
crime and the identification and between the identification and the trial. In fact, the US
Department of Justice’s Bureau of Justice Statistics (2001) reported that in 1998, the
mean time from arrest to sentencing for felony cases tried by a jury was 379 days.
Therefore, it is crucial that the effect of the passage of time on this effect be investigated.
After all, the post-identification feedback effect would only be applicable to real-life
situations if it persisted until the case actually went to court.

In summary, if the trace strength hypothesis is correct, then we should see an interaction
between age and feedback (i.e. elderly people would be more susceptible to post-
identification feedback). Furthermore, feedback should have a greater effect when there
is a longer retention interval. By contrast, the accessibility hypothesis simply predicts a
main effect of feedback.

Method

Participants
A total of 65 volunteer senior participants were recruited from local churches, retirement
communities, and senior citizen organizations for participation in the study. For the young
adult sample, 67 participants were recruited from Introductory Psychology and Statistics
courses at the University of Alabama in Huntsville and State University of New York-
Cortland. The young adults participated as partial fulfilment of a course requirement for
experimental participation or library research. The mean age of the young adults was 19.8
years (range = 18–36). Education level for young adults ranged from freshmen to seniors
in college (M = 13.1 years, SD = 1.31). The mean age for the elder adults was 70.7 years
(range = 57.6–85.8) and the mean education level was 15 years (SD = 3.26). There were
15–18 participants in each condition. More specifically, of the young adults, 16 received
feedback and answered questions immediately, 16 did not receive feedback and answered
immediately, 18 received feedback and answered questions after 1 week, and 17 did not
receive feedback and answered after a week. Of the elder adults, 15 received feedback and
answered questions immediately, 16 did not receive feedback and answered immediately,
18 received feedback and answered questions after 1 week, and 16 did not receive
feedback and answered after a week.

Design
The experiment was a 2 (Feedback: Confirming Feedback vs. No Feedback) × 2 (Age:
Elder Adult vs. Young Adult) × 2 (Retention Interval: Immediate vs. 1 week) randomized,
between-participants factorial design. The dependent measures were 16 questions used in
Experiment 1 (see Appendix 1 for the full questionnaire). Participants also completed a
12-item yes/no recognition test.

Materials and procedure
The materials and procedures were exactly the same as Experiment 1, with three
exceptions. First, participants did not complete the Digit Symbol Coding test due to an
experimental oversight. Second, all participants were required to take a Snellen eye test.
We had intended that data from participants whose corrected vision was worse than 20/40 would not be included in the final analysis. Fortunately, no participants had to be dropped from the analysis due to poor visual acuity. Third, participants in the 1-week delay condition were dismissed after the feedback manipulation and asked to return 1 week later. During the second session, participants followed exactly the same procedures as participants in the immediate condition. That is, they completed their post-identification questionnaire followed by a 12-question recognition test. During the recognition test, participants were instructed to circle ‘yes’ next to test items that they remembered being presented during the video and to circle ‘no’ for any items on the test that they did not remember being presented in the video. A few examples of the questions on the recognition question were, ‘Was the store employee wearing an apron?’, ‘Was the man in slow motion wearing a white t-shirt in the video?’, and ‘Did the store employee interact with any customers?’. After completing the recognition test, all participants were thanked and debriefed.

As in Experiment 1, participants rated their health and vision. On the 1 to 4 scale (1 = excellent; 2 = good; 3 = fair; 4 = poor), younger adults rated their health at 1.45 (SD = 0.50) on average, while older adults rated theirs at 1.69 (SD = 0.61). Similarly, younger adults’ vision averaged at 1.57 (SD = 0.58), while that of elder adults was 1.74 (SD = 0.50). Neither effect of age was significant.

Participants also took the WAIS-R Digit Span Tests, with analyses revealing only one significant finding as on the Digits Forward test, younger adults had a mean span of 7.10 compared to 6.20 for older adults. Participants who received feedback averaged 6.72, while participants who did not receive feedback scored 6.60. On the Digits Backward test, younger adults scored 4.82 and elders scored 4.65. Scores for feedback and non-feedback participants were 4.81 and 4.66, respectively. Although young adults scored higher on the WAIS digit forward task than did older adults, none of the results reported below were qualified when this WAIS score was employed as a covariate; therefore, we do mention this difference further.

**Results and discussion**

The goal of this study was to replicate and extend the findings of Experiment 1 and to provide a more direct test of the trace strength and accessibility hypotheses. As can be seen in Table 2, the results from Experiment 2 replicate Experiment 1 quite nicely. That is, participants who received feedback increased their ratings on almost every measure. Furthermore, as was the case in Experiment 1, there were no Feedback × Age and only one Feedback x Retention Interval interactions. Thus, the influence of post-identification feedback does not vary with age or retention intervals as long as 1 week. These results support the accessibility hypothesis and appear to be inconsistent with the trace strength account.

**Recognition test**

We first analysed the recognition data to ascertain whether there was an effect of age and retention interval on recognition memory. To this end, a 2 (Feedback: Confirming Feedback vs. No Feedback) × 2 (Age: Elder vs. Young Adult) × 2 (Retention Interval: Immediate vs. 1 week) ANOVA was conducted on the number of items correctly recognized revealed a main effect of age, $F(1, 123) = 77.99$, $MSE = 2.23$, $p < 0.01$, and retention interval, $F(1, 123) = 80.87$, $MSE = 2.23$, $p < 0.01$. As predicted on the 12-question test, immediate recognition memory ($M = 9.90$) was superior to memory after
a retention interval ($M = 8.31$), and younger adults ($M = 9.88$) correctly remembered more items than older adults ($M = 8.31$). There were no other significant effects or interactions. This replicates what has previously been found in the literature (Light, 1996) and allows for testing the predictions of the trace strength hypothesis. As indexed by recognition memory, strength was reduced by both retention interval and age.

As was the case in Experiment 1, all participants chose someone from the target-absent line-up. A Chi square analysis conducted on the distribution of line-up choices was significant, $\chi^2(4) = 97.96, p < 0.001$. This suggests that participants were not identifying each suspect in the line-up equally often. In fact, suspect #1 was chosen 27 times, #2 was selected by 17 participants, #3 by 57 subjects, #4 by eight subjects, and suspect #5 attracted 21 responses. The distribution of suspect selection was extremely similar to the distribution in Experiment 1, as suspect #3 again was selected most often.

**Post-feedback questionnaire**

As was the case in Experiment 1, we first conducted a MANOVA using the first 14 measures (questions) on the post-identification questionnaire displayed in Appendix 1.

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Table 2. Means and standard deviations as a function of feedback and age for experiment 2

<table>
<thead>
<tr>
<th></th>
<th>Feedback Young</th>
<th>No feedback Young</th>
<th>Feedback Old</th>
<th>No feedback Old</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certainty</td>
<td>$M$ 4.9$^a$</td>
<td>3.0</td>
<td>4.9$^a$</td>
<td>2.8</td>
</tr>
<tr>
<td></td>
<td>$SD$ 1.3</td>
<td>1.6</td>
<td>1.7</td>
<td>1.7</td>
</tr>
<tr>
<td>View</td>
<td>$M$ 3.8$^c$</td>
<td>3.1</td>
<td>4.0$^a$</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>$SD$ 1.5</td>
<td>1.5</td>
<td>1.8</td>
<td>1.3</td>
</tr>
<tr>
<td>Face</td>
<td>$M$ 3.9$^a$</td>
<td>2.9</td>
<td>3.9$^a$</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>$SD$ 1.5</td>
<td>1.2</td>
<td>1.4</td>
<td>1.3</td>
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<tr>
<td>Distance</td>
<td>$M$ 2.9</td>
<td>2.6</td>
<td>3.4$^b$</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>$SD$ 1.2</td>
<td>1.2</td>
<td>1.8</td>
<td>1.4</td>
</tr>
<tr>
<td>Attention</td>
<td>$M$ 4.5</td>
<td>4.2</td>
<td>5.0$^a$</td>
<td>3.9</td>
</tr>
<tr>
<td></td>
<td>$SD$ 1.9</td>
<td>1.9</td>
<td>1.8</td>
<td>2.1</td>
</tr>
<tr>
<td>Basis</td>
<td>$M$ 4.2$^a$</td>
<td>2.8</td>
<td>4.7$^b$</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td>$SD$ 1.6</td>
<td>1.3</td>
<td>1.5</td>
<td>1.8</td>
</tr>
<tr>
<td>Ease</td>
<td>$M$ 3.6$^a$</td>
<td>5.1</td>
<td>4.0$^a$</td>
<td>5.2</td>
</tr>
<tr>
<td></td>
<td>$SD$ 1.7</td>
<td>1.6</td>
<td>1.9</td>
<td>2.1</td>
</tr>
<tr>
<td>Time</td>
<td>$M$ 3.4$^a$</td>
<td>3.9</td>
<td>3.6$^a$</td>
<td>4.9</td>
</tr>
<tr>
<td></td>
<td>$SD$ 1.3</td>
<td>1.7</td>
<td>1.5</td>
<td>2.0</td>
</tr>
<tr>
<td>Testify</td>
<td>$M$ 3.16$^a$</td>
<td>2.1</td>
<td>4.0$^a$</td>
<td>1.9</td>
</tr>
<tr>
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<td>$SD$ 1.7</td>
<td>1.5</td>
<td>2.3</td>
<td>1.6</td>
</tr>
<tr>
<td>Trusted</td>
<td>$M$ 4.1</td>
<td>3.7</td>
<td>4.7$^a$</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>$SD$ 1.8</td>
<td>1.6</td>
<td>2.1</td>
<td>2.2</td>
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<tr>
<td>Memory</td>
<td>$M$ 5.1$^b$</td>
<td>4.3</td>
<td>5.0$^b$</td>
<td>4.3</td>
</tr>
<tr>
<td></td>
<td>$SD$ 1.3</td>
<td>1.5</td>
<td>1.4</td>
<td>1.8</td>
</tr>
<tr>
<td>Sure</td>
<td>$M$ 4.8$^a$</td>
<td>2.9</td>
<td>5.2$^a$</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>$SD$ 1.6</td>
<td>1.6</td>
<td>1.9</td>
<td>1.8</td>
</tr>
<tr>
<td>See</td>
<td>$M$ 3.5$^b$</td>
<td>2.18</td>
<td>3.9$^a$</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>$SD$ 1.4</td>
<td>1.1</td>
<td>1.9</td>
<td>1.3</td>
</tr>
<tr>
<td>Clarity</td>
<td>$M$ 3.9$^a$</td>
<td>2.8</td>
<td>4.6$^a$</td>
<td>2.6</td>
</tr>
<tr>
<td></td>
<td>$SD$ 1.6</td>
<td>1.4</td>
<td>1.9</td>
<td>1.7</td>
</tr>
<tr>
<td>Seconds in view</td>
<td>$M$ 15</td>
<td>20</td>
<td>17</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>$SD$ 5.0</td>
<td>5.0</td>
<td>5.2</td>
<td>4.9</td>
</tr>
</tbody>
</table>

Note: $^a$Significant from the no feedback condition at the 0.01 level; $^b$significant from the no feedback condition at the 0.05 level; $^c$significant from the no feedback condition at the 0.06 level.
The MANOVA returned significant results, \( F(13, 112) = 5.26, p < 0.01 \). This analysis was followed up with univariate analyses on the measures and planned contrasts with one degree of freedom to investigate the effect of confirming feedback for each age group. More specifically, we conducted separate 2 (Feedback: Confirming Feedback vs. No Feedback) \( \times \) 2 (Age: Elderly vs. Young Adult) \( \times \) 2 (Retention Interval: Immediate vs. 1 week) ANOVAs for these questions on the post-identification questionnaire.

Similar to the results of Experiment 1, confirming feedback had a dramatic effect on participants’ memory for the suspect they had identified. The separate univariate ANOVAs conducted on the first 14 questions revealed 12 significant effects at the \( p < 0.01 \) level of significance. The remaining two measures (‘How much attention were you paying to gunman’s face?’ and ‘What would you estimate the distance between the camera view and gunman’s face?’) were significant at the \( p < 0.05 \) level. Once again, we will use participants’ certainty as an illustrative example of the post-identification feedback effect. Participants’ confidence in their identifications increased when they were given confirming feedback (\( M = 5.15 \)), as opposed to when they were given no feedback (\( M = 3.45, F(1, 113) = 38.51, MSE = 2.20, p < 0.01 \)). Post-identification feedback had a similar effect on participants’ ratings of their view of the suspect, their ability to make out details of the face of the suspect, their basis for making the identification, their willingness to testify, how much they trusted their identification, how good they rated their recognition memory, how well they could see the gunman, and clarity of the image in memory. As was the case in Experiment 1, giving participant witnesses confirming feedback resulted in the belief that they were more trustworthy and reliable witnesses.

The planned comparisons revealed the same consistent pattern of results as the univariate analyses. That is, when the feedback was compared for the elderly age group, for all 14 measures that were significant in the univariate analyses, all but two of the comparisons were significant at the \( p < 0.01 \) level. Participants estimates of how much attention was paid to the gunman’s face and how good their recognition memory were significant at the \( p < 0.05 \) level.

The comparison of feedback versus no feedback for younger adults revealed a similar pattern of results. Of the 14 primary measures of the witnessing experience, nine were significant. Seven of these were significant at the 0.01 level and two were significant at the 0.05 level (‘How good is your recognition memory?’ and ‘How well could you see the gunman?’). In addition, the question ‘How good a view did you have?’ (\( p < 0.06 \)) and ‘How long did you see the gunman?’ (\( p < 0.10 \)) were marginally significant. As was the case in Experiment 1, both the questions about attention paid to the gunman’s face and how good their recognition memory were significant at the \( p < 0.05 \) level.

Importantly, there was a two-way interaction only between feedback and retention interval for the willingness to testify question. Although the difference between the feedback and no feedback conditions were significant at the 0.01 level for both the immediate (mean difference = 1.3) and the delayed retention interval groups (mean difference = 2.5), the mean differences were larger after the retention interval.

The analyses also revealed four three-way interactions for the questions relating to view, attention, recognition memory, and trust (all \( p \) values less than 0.05). The four interactions did not reveal any consistent pattern. We will use participants’ estimates of their view and their attention in their identification as illustrative examples. For the view question, there were significant feedback effects for young participants immediately and for elderly participants after a week retention interval. In terms of trust, all the comparisons for feedback versus no feedback were in the anticipated direction, but only the results for elder
adults tested after a week retention interval reached significance. The other two three-way interactions were similar in that they revealed no clear pattern of results. Finally, there was only one marginally significant main effect of age and that was for the question regarding the length of time it took participants to make the identification. Younger participants provided ratings indicating that they took less time to make an identification ($M = 3.6$) than did elder participants ($M = 4.2$), $F(1, 123) = 3.51$, $MSE = 2.88$, $p < 0.06$.

As was the case in Experiment 1 we conducted three separate 2 (Feedback: Confirming vs. None) $\times$ 2 (Response: The gunman’s photo just ‘popped out’ vs. ‘I used a process of elimination’) Chi-square analyses on the overall data, on the elder participants, and on the young participants. These analyses revealed no significant effects, as participants were just as likely to choose either strategy. While the pop out strategy was selected quite often in Experiment 2 it was not the preferred strategy as discovered in Experiment 1.

**GENERAL DISCUSSION**

The primary motivation of this study was to investigate the effect of post-identification feedback on retrospective memories of older adults. There were several interesting and important findings, which replicate and extend the work of Wells and colleagues (Bradfield et al., 2002; Wells & Bradfield, 1998, 1999; Wells et al., 2003) to elder adults. We found a large and robust effect of confirming post-feedback information on elderly adults. Both young and elderly adults who received confirming feedback indicated that they were more certain in their identification, claimed to have had a better view of the suspect, reported paying more attention to the suspect, believed they had a better basis to make an identification, and were more willing to testify than were participants who were not given any feedback.

Interestingly, the post-identification feedback effect did not vary with age or retention interval, which indicates how powerful the effect truly is. Generally, it has been found, with a few exceptions (e.g. Coxon & Valentine, 1997), that older adults are more suggestible than younger adults (Karpel et al., 2001; Mitchell et al., 2003). The fact that confirming post-identification feedback, which is a form of suggestion, did not vary with age indicates that its effects are so powerful that they override those factors which typically contribute to more confusion for elder adults (e.g. difficulty discriminating source, see Mitchell et al., 2003, for a review).

The fact that feedback had the same effect on both elderly and younger participants and was not affected by retention interval is also important, as it helps distinguish between two theoretical accounts. The trace strength hypothesis suggests that post-identification feedback should have had the strongest effect in the situation where the original memory trace is the weakest. The strongest influence would be expected to be found in elder adults, because they tend to have worse memories than younger people (see Light, 1996, for a review). This was clearly not the case, as the post-identification feedback effect was evidenced at the same magnitude for both age groups (as indicated by no Feedback $\times$ Age interactions on any of the post-identification measures). The results of the present study do not offer support for these predictions of the trace strength hypothesis.

The results of this study do provide evidence consistent with an accessibility or retrievability account, which posits that both age groups would have to make inferences based on what they can remember from the experience. Participants who received confirming feedback could infer that they must have been confident, had a good view,
and paid attention to the gunman’s face, because they received positive reinforcement regarding the accuracy of their identification. According to the accessibility hypothesis, this inference process did not vary with age, since both groups were forced to base their inferences on the feedback, by virtue of fact that they made no such judgments at the time of the identification.

The accessibility hypothesis is also consistent with Wells and Bradfield’s (1998) Experiment 2 results. They found that asking participants to make confidence judgments immediately after they made their identifications and before the feedback was given inoculated participants against the influence of feedback. Wells and Bradfield referred to this as the confidence prophylactic effect. Requiring participants to make these judgments at the time of the identification means they do not have to try to reconstruct the information at the time they are questioned. Since information about their confidence in their line-up identification has been made salient it should already exist in memory at the time the measures are taken. Therefore, judgments can be based on the memory, rather than inferred from feedback.

Our findings also are consistent with a recent study by Mitchell et al. (2003), who argued that older adults are more susceptible to suggestion because they lack or failed to use helpful diagnostic cues. In similar vein, in terms of accessibility the post-identification feedback has similar effects on both age groups, because these diagnostic cues are not registered in memory and cannot be employed at the time the post-identification questionnaire is given. In other words, cues that generally benefit younger adults are not accessible for them at the time they are questioned, which makes their performance similar to that of older adults.

In the future, researchers should direct their investigative efforts on post-identification feedback in two important ways. First, although the present experiments lend support to the accessibility hypothesis, the support is somewhat indirect. There is need for a direct test of this hypothesis and other competing hypotheses. This research will help to locate the theoretical underpinnings of the effect. Second, to build on the applied significance of the current work, we recommend investigating ways in which to reduce or eliminate the post-identification feedback effect for witness of all ages. Wells and Bradfield (1998) started some of this important work in their seminal article, but certainly much more needs to be done including testing these effects with various age groups.

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United States v. Ramirez–Rodriguez, 552 F.2d 883, 884 (9th Cir. 1977).


**APPENDIX 1. POST-IDENTIFICATION QUESTIONS**

**Qualities**

1. At the time that you identified the person in the photo spread, how certain were you that the person you identified from the photos was the gunman you saw in the video?

2. How good of a view did you get of the gunman?

3. How well were you able to make out specific features of the gunman’s face from the video?

**Scale**

1 (not at all certain) to 7 (totally certain)

1 (very poor) to 7 (very good)

1 (not at all) to 7 (very well)
4. What would you estimate was the distance between the camera-eye view and the gunman’s face?

1 feet ( = 1) to 10 feet ( = 10) in 10-foot increments

5. How much attention were you paying to the gunman’s face while viewing the video?

1 (none) to 7 (my total attention)

6. To what extent do you feel that you had a good basis (enough information) to make an identification?

1 (no basis at all) to 7 (a very good basis)

7. How easy or difficult was it for you to figure out which person in the photos was the gunman?

1 (extremely easy) to 7 (extremely difficult)

8. After you were first shown the photos, how long do you estimate it took you to make the identification?

1 (I needed almost no time to pick him out) to 7 (I had to look at the photos for a long time to pick him out)

9. 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 (not at all willing) to 7 (totally willing)

10. Assume that an eyewitness had about the same view of the gunman that you had from the video. Do you think that an identification by this eyewitness ought to be trusted?

1 (definitely should not be trusted) to 7 (definitely should be trusted)

11. Generally, how good is your recognition memory for faces of strangers you have encountered on only one prior occasion?

1 (very poor) to 7 (excellent)

12. At the time you identified the person in the photos, how sure were you that the person you identified was the gunman in the video?

1 (totally unsure) to 7 (totally sure)

13. How well could you see the gunman?

1 (very poorly) to 7 (very well)

14. How clear is the image you have in your head of the gunman you saw in the video?

1 (not at all clear) to 7 (very clear)

15. Which one of the following statements best describes how you went about trying to identify the gunman from the five photos? (Indicate one and only one).

1 = The gunman’s photo just ‘popped out’ at me and I recognized it immediately.

2 = I used a process of elimination, deciding which photos were not of the gunman before deciding which photo must be that of the gunman.

Open response (Please write your answer in the space provided on the answer sheet).