The Information Gained From Witnesses’ Responses to an Initial “Blank” Lineup

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Wells (“The psychology of lineup identifications,” Journal of Applied Social Psychology, 1984, 14, 89–103) proposed that a blank lineup (an initial lineup of known-to-be-innocent foils) can be used to screen eyewitnesses; witnesses who chose from a blank lineup (initial choosers) were more likely to make an error on a second lineup that contained a suspect than were witnesses who rejected a blank lineup (initial nonchoosers). Recent technological advances (e.g., computer-administered lineups) may overcome many of the practical difficulties cited as a barrier to the use of blank lineups. Our research extended knowledge about the blank lineup procedure by investigating the underlying causes of the difference in identification performance between initial choosers and initial nonchoosers. Studies 1a and 1b (total, \(N = 303\)) demonstrated that initial choosers were more likely to reject a second lineup than initial nonchoosers and witnesses who did not view a blank lineup, implying that cognitive biases (e.g., confirmation bias and commitment effects) influenced initial choosers’ identification decisions. In Study 2 (\(N = 200\), responses on a forced-choice identification test provided evidence that initial choosers have, on average, poorer memories for the culprit than do initial nonchoosers. We also investigated the usefulness of blank lineups for interpreting identification evidence. Diagnosticity ratios suggested that suspect identifications made by initial nonchoosers (cf. initial choosers) should have a greater impact on estimates of the likely guilt of the suspect. Furthermore, for initial nonchoosers, higher confidence in blank lineup rejections was associated with higher diagnosticity for subsequent suspect identifications. These results have implications for policy to guide the collection and interpretation of identification evidence.

Keywords: eyewitness identification, blank lineup, confirmation bias, confidence, latency

The prevalence of eyewitness identification errors (e.g., Cutler & Penrod, 1995; Innocence Project, 2011; Wells et al., 1998) has lead psychologists to investigate alternative identification procedures that reduce the likelihood of mistaken identification. One of the first of these was the “blank lineup” procedure (Wells, 1984), which involves showing witnesses an initial lineup—comprising only known-to-be-innocent foils—prior to a lineup that contains the suspect (i.e., a suspect-present lineup). The blank lineup was proposed as a screening tool: compared to witnesses who correctly reject the blank lineup, those who identify someone from the blank lineup should be more likely to make an incorrect response to the suspect-present lineup.

Since Wells (1984) first described the procedure, it has received minimal attention from researchers. Accordingly, our research had two aims. The first was to explore the differences between witnesses who identify someone from a blank lineup (henceforth, initial choosers) and those who reject a blank lineup (initial nonchoosers) in terms of the characteristics that underpin differences in performance on a second, suspect-present lineup. In Studies 1a and 1b, we examined whether cognitive biases such as confirmation bias (e.g., Nickerson, 1998) and commitment effects (Gorenstein & Ellsworth, 1980) influence initial choosers’ responses to a second, suspect-present lineup. In Study 2, we directly tested Wells’ conclusion that initial choosers have, on average, poorer memories for the culprit than do initial nonchoosers. The second aim was to extend Wells’ investigation of the usefulness of the blank lineup procedure for interpreting eyewitness identification evidence. We examined the diagnosticity of suspect identifications made by initial choosers, nonchoosers, and witnesses who did not view a blank lineup. We also considered the confidence with which witnesses chose from or rejected the blank lineup.

Relative Judgments and the Blank Lineup Procedure

The conceptual distinction between relative and absolute judgments (Wells, 1984) has been prominent in the eyewitness identification literature. Using a relative judgment strategy, a witness will select the lineup member who most closely resembles their memory of the culprit relative to the other lineup members. In contrast, a witness using an absolute judgment strategy will only identify a lineup member if they match the witness’s memory of the culprit. Wells argued that a relative judgment strategy greatly increases the risk of false identification when the lineup contains
an innocent suspect rather than the culprit. Although the relative-
absolute distinction does not provide a comprehensive explanation
of eyewitness identification decisions (e.g., Wells, 1993), this
concept has been very influential in eyewitness memory research.

Wells (1984) proposed an initial blank lineup as a screening tool
to identify witnesses who are prone to adopting a relative judgment
strategy. Wells had witnesses view a simulated crime and later
asked them to identify the culprit from a lineup. Half of the
witnesses viewed a culprit-present lineup and half viewed a
culprit-absent lineup. Prior to viewing the final lineup, some
witnesses viewed a blank lineup and chose a foil (initial choosers)
or rejected the lineup (initial nonchoosers). Compared to initial
nonchoosers (23.3%), initial choosers (55.6%) were more likely to
identify a foil from a (subsequent) culprit-absent lineup. Further-
more, initial choosers (33.3%) were less likely to identify the
culprit from a (subsequent) culprit-present lineup than were initial
nonchoosers (60.0%) or witnesses who did not view the blank
lineup (60.4%). From these results, Wells drew two conclusions
about the underlying differences between initial choosers and
nonchoosers: (a) initial choosers tend to adopt a relative judgment
strategy, and (b) initial choosers likely have, on average, poorer
memories of the culprit than do initial nonchoosers.

An identification procedure that can be used to classify wit-
nesses as relatively more or less likely to make an accurate
identification decision has clear applied value in that a witness’s
response to a blank lineup can guide the extent to which investiga-
tors’ judgments about the likely guilt of a suspect are influenced
by the witness’s response to a suspect-present lineup. However,
deep Wells’ (1984) promising results, the blank lineup pro-
dure has not come into common use in criminal investigations.
This may in part reflect practical limitations such as the time and
effort required of police investigators to locate extra foils for a
blank lineup (Lindsay & Wells, 1985). Nevertheless, there are two
reasons to expect that the use of blank lineups could increase. First,
there is legal precedent for the court to order police to use a blank
lineup procedure. In several cases where a suspect has been re-
quired to participate in an identification test, the court has upheld
the suspect’s request that a blank lineup procedure be used (People
v. Brown, 1988; People v. Moses, 1987; United States v. Tyler,
1989; United States v. Crouch, 1979; see also Hibel, 2006). Sec-
ond, and more important, technological advances mean that some
of the key practical limitations associated with the blank lineup
procedure will soon become less relevant. For example, the in-
creasing use of computer-administered photo-lineups will give
many police investigators access to large databases of potential
foils, making the construction of an extra lineup much more
feasible compared with finding an additional group of match-
description foils. Because these developments could underpin
the increased use of blank lineups as a screening tool in criminal
investigations, it is important for researchers to develop a com-
prehensive understanding of the blank lineup paradigm and, in par-
ticular, the inferences that can be drawn about initial choosers and
nonchoosers.

The Present Research

This research aimed to increase understanding of the blank
lineup paradigm in two ways. First, we explored the underlying
differences between initial choosers and initial nonchoosers that
might have produced the different patterns of identification re-
ponses obtained. Specifically, we investigated whether cognitive
biases and poor quality of memory for the culprit contributed to the
inferior identification performance (on a second lineup) of initial
choosers relative to other witnesses. Second, we examined the
usefulness of the blank lineup procedure for evaluating identifica-
tion evidence. As part of this aim, we were interested in whether
the confidence with which witnesses chose from or rejected a
blank lineup was informative about the likely accuracy of re-
sponses to a second lineup.

Studies 1a and 1b

Cognitive Biases

As noted by Wells (1993), the pattern of identification responses
found by Wells (1984) cannot be explained by the concept of
relative judgments alone. If initial choosers’ decisions were driven
only by relative judgments, we would expect them to always make
correct identifications from culprit-present lineups (given that the
culprit will be the best available match). Instead, Wells (1984)
found that initial choosers actually made less correct identifica-
tions than did other witnesses. This finding can be partly explained
by the notion that initial choosers had, on average, poorer mem-
ories of the culprit than did other witnesses (Wells, 1984). How-
ever, a combination of poor memory and relative judgment strat-
egy would produce a high proportion of positive identifications
from a second lineup, comprising a relatively large number of foil
identifications and a relatively small number of correct identifica-
tions. Instead, Wells’ (1984) data indicate that initial choosers
were actually less likely to choose someone from the second lineup
(47.2%) than were witnesses who did not view a blank lineup
(76.0%). If relative judgments and poor memory for the culprit
cannot account for these results, what other cognitive processes
might contribute to the difference in identification responses be-
tween initial choosers and other witnesses?

Cognitive biases such as commitment effects and confirmation
bias might help to explain the difference in identification responses
between initial choosers and initial nonchoosers found by Wells
(1984). Commitment effects, in the context of face recognition
tasks, refer to the fact that people tend to make recognition
decisions that are consistent with their previous recognition deci-
sions. For example, if a witness chooses a foil from an initial
mugshot search, they are likely to identify that foil from a later
lineup, even if the lineup contains the actual culprit (Gorenstein &
Ellsworth, 1980). In this situation, the act of endorsing a previ-
ously unseen stimulus on the initial test plays an important role;
unstudied items are more likely to be falsely recognized if they
were chosen on an earlier test than if they were rejected on an
earlier test (Deffenbacher, Bornstein, & Penrod, 2006). Commit-
ment effects might be viewed as one type of confirmation bias
(e.g., Klayman & Ha, 1987; Nickerson, 1998; Wason, 1960),
which refers to the tendency for people to make decisions that are
consistent with their preexisting beliefs or hypotheses. For exam-
ple, there is evidence that people selectively attend to information
that is consistent with established beliefs (e.g., Fischhoff & Beyh-
Marom, 1983), and interpret evidence in ways that support, rather
than contradict, established beliefs (e.g., Darley & Gross, 1983;
Kuhn, 1989).
In the blank lineup paradigm, commitment and confirmation bias effects might cause a witness who chooses someone from an initial lineup to be predisposed to reject a second lineup on the basis that the culprit had already appeared in the first lineup (see Davies, Shepherd, & Ellis, 1979, for evidence of this type of effect in the face recognition paradigm). The results of a pilot study (N = 61) conducted in our laboratory were consistent with this idea. After viewing a video of a mock-crime, followed by a blank lineup, participants were informed that they were about to be shown another lineup that may or may not contain the culprit. Prior to viewing the second lineup, witnesses were asked to rate the probability that it would contain the culprit. Probability ratings were lower for participants who had chosen from the blank lineup, M = 41.20%, than participants who rejected the blank lineup, M = 61.25%; t(39) = 2.57, p = .014, or another group who did not view the blank lineup, M = 59.75%, t(39.29) = 3.48, p = .001.

For initial choosers who consider it unlikely that the culprit will appear in a second lineup, commitment and confirmation bias mechanisms would facilitate the rejection of a second lineup. For example, once the witness has determined that the person chosen from the initial lineup is not in the second lineup, the witness might simply respond not present to maintain consistency with their earlier decision (a commitment effect) or selectively attend to features of lineup members that differ from, rather than match, their memory of the culprit (confirmation bias). Note that the operation of such cognitive biases would not only reduce choosing from the second lineup, it would also reduce the response latency for not present responses to the second lineup. For example, in the framework of evidence accumulation models of decision making (Van Zandt, 2000; Vickers, 1979), selectively attending to information that supports a particular response option (e.g., not present) will increase the rate at which evidence supporting that decision accumulates, reducing the time taken to reach a decision. Thus, witnesses who selectively attend to information supporting a not present response (i.e., initial choosers) will, on average, make lineup rejections more quickly than witnesses who do not selectively attend to such information (i.e., initial nonchoosers and witnesses who did not view a blank lineup).

The Interpretation of Identification Evidence

Our second aim was to examine the usefulness of the blank lineup procedure for evaluating identification evidence. Wells’ (1984) results suggest that the blank lineup procedure can be used to classify witnesses as more (initial nonchoosers) or less (initial choosers) likely to make a correct response to a second, suspect-present lineup. In turn, by taking a witness’s response to a blank lineup into account, investigators can more effectively evaluate the likely accuracy of the witness’s response to the suspect-present lineup.

This idea is best illustrated through the concept of diagnosticity (Wells & Lindsay, 1980). Diagnosticity ratios reflect the degree to which investigators should adjust their estimates of the probable guilt of the suspect (based on other evidence) in light of a witness’s identification decision. For suspect identifications, diagnosticity is calculated as the ratio of (a) the probability of making a correct identification from a target-present lineup, to (b) the probability of incorrectly identifying an innocent suspect from a target-absent lineup. If there is no designated innocent suspect, as was the case in the present research, (b) can be estimated by dividing the probability of a foil identification from a target-absent lineup by the number of lineup members (e.g., Brewer & Wells, 2006). A diagnosticity ratio of 1 indicates that a witness’s identification response should have no bearing on prior estimates of the likely guilt of the suspect. Higher positive values indicate that the witness’s decision should lead to a greater increase in investigators’ estimates of the probable guilt of the suspect. Based on Wells’ (1984) results, we expected that diagnosticity would be greater for suspect identifications made by initial nonchoosers than those made by initial choosers.

Summary

In Studies 1a and 1b, we investigated whether confirmation bias influenced initial choosers’ responses to a second lineup by examining patterns of identification responses and the response latencies for lineup rejections. We also investigated the usefulness of the blank lineup procedure for evaluating identification evidence by examining diagnosticity ratios and taking into account the confidence ratings that accompanied witnesses’ responses to blank lineups.

Studies 1a and 1b each employed a single-factor design with identification procedure manipulated between subjects. Witnesses viewed a mock-crime and later were asked to identify the culprit either via a blank lineup procedure or from a single lineup. The key difference between Studies 1a and 1b was whether the culprit was present in the second lineup. In Study 1a, witnesses in the blank lineup condition viewed a blank lineup followed by a culprit-present lineup; witnesses in the single-lineup condition viewed only the culprit-present lineup. In Study 1b, witnesses in the blank lineup condition viewed a blank lineup followed by a culprit-absent lineup. Witnesses in the single-lineup condition of Study 1b viewed only the culprit-absent lineup.

If cognitive biases (i.e., commitment effects and confirmation bias) contribute to the difference in identification responses between initial choosers and other witnesses, rejections of the second lineup would be (a) more common for initial choosers than other witnesses, and (b) faster for initial choosers than other witnesses. Furthermore, if the blank lineup procedure is useful for evaluating the accuracy of identification decisions, diagnosticity would be greater for initial nonchoosers than other witnesses.

Method

Participants. A total of 303 individuals (predominantly Caucasian; 168 female; aged 17–67 years, M = 23.16, SD = 6.83) participated in Studies 1a and 1b. Participants were undergraduate students and volunteers recruited from community groups. All participants were paid an honorarium for their time.

Materials. Materials comprised a mock-crime video and a set of lineup photographs. The mock-crime video ran for approximately one minute and depicted a nonviolent crime involving four young, Caucasian perpetrators (two female) breaking into a shed and stealing several items. The four characters in the video differed from each other in physical appearance and clothing (e.g., a male with short dark hair wearing a gray shirt; a male with short blonde hair wearing a red shirt and vision-correcting glasses). The lineup photographs for Study 1a included head-and-shoulders photographs of the nominated target (the male who was
wearing a red shirt in the video) and 11 match-to-description foils. For Study 1b, the target was replaced by another match-to-description foil. No lineup member wore a red shirt for their lineup photograph. The foils were chosen from a larger pool of male faces and, following Palmer, Brewer, McKinnon, and Weber (2010), their suitability was assessed via the following procedure. First, one group of mock witnesses \((N = 3)\) viewed the stimulus video and provided a physical description of the target. These descriptions were used to produce a modal description. A second group of mock witnesses \((N = 20)\) who had not viewed the stimulus video was presented with the 12 foils and modal description and asked to select any faces that matched the description. The mean number of foils selected was 8.9 \((SD = 1.74)\), and each foil was selected by at least six mock witnesses.

The allocation of foils to the blank lineup and second lineup differed slightly between Study 1a and 1b. This was unintentional and resulted from an update of the software used to conduct the experiments. In both studies, six foils were randomly selected to form the blank lineup and the remaining foils appeared in the second lineup. In Study 1b, this process occurred prior to data collection and each participant viewed the same blank lineup. In Study 1a, the selection process was repeated for each participant; thus, the composition of the blank lineup varied across participants.

**Procedure.** Participants completed the experiment in individual cubicles. All instructions were administered via computer, and participants made their responses by using a mouse to click on-screen buttons. All participants viewed the mock-crime video and completed a 5-min distractor task.

Participants who were randomly allocated to the blank lineup condition were then informed that they were about to view two lineups. Participants were not informed that the two lineups would be for the same person from the video. Prior to viewing the first lineup, participants were asked to look for the male who wore a red shirt in the video and were reminded that he may or may not be present in the lineup. Participants were asked to click on the photo of the male who wore a red shirt in the video or click the not present button. Participants were then shown a blank lineup. Response latency was recorded via computer. After making their response to the blank lineup, participants were asked to rate how confident they were that their identification decision was correct on an 11-point scale \((0\% = \text{not at all confident} \quad \text{to} \quad 100\% = \text{completely confident})\). Participants in the blank lineup condition were then informed that they were about to view the second lineup, and were asked to again look for the male who wore a red shirt in the video. Participants were reminded that this person may or may not be present in the lineup, and were then shown a culprit-present (Study 1a) or culprit-absent (Study 1b) lineup. As per the blank lineup, response latency was recorded via computer and participants rated their confidence in the accuracy of their identification decision.

For participants randomly allocated to the single lineup control condition in Studies 1a and 1b, the lineup instructions and identification test procedure were identical to the corresponding blank lineup conditions, with the exception that control participants were not told that they would see two lineups and did not view the blank lineup.

**Results and Discussion**

An alpha level of 0.05 was used for all inferential analyses. Guidelines for small, medium, and large effects are 0.1, 0.3, and 0.5, respectively, for the effect size estimate \(w\) (for comparisons of proportions), and 0.1, 0.25, and 0.4 for the effect size estimate \(f\) (for comparisons of means).

**The effects of cognitive biases.** Across Studies 1a and 1b, 152 witnesses viewed the initial blank lineup. The blank lineup choosing rate was somewhat higher in Study 1b (49.4%) than Study 1a (35.6%), possibly due to the different methods of selecting foils for the blank lineup described earlier. All following analyses in this section refer to responses made to the second (culprit-present or culprit-absent) lineup viewed by all witnesses.

The proportions and frequencies of correct identifications, foil identifications, and incorrect rejections made from culprit-present lineups in Studies 1a and 1b are displayed in Table 1. For target-present lineups (Study 1a), planned comparisons were conducted to compare choosing and accuracy rates of initial choosers with those of (a) initial nonchoosers and (b) witnesses who did not view the initial lineup. The results were consistent with the predicted effects of cognitive biases. For choosing rates, the proportion of positive identifications was lower among initial choosers, 34.6%, than initial nonchoosers, 61.7%. \(\chi^2(1, n = 73) = 4.92, p = .027, w = 0.26\), and witnesses who did not view the initial lineup, 67.1%, \(\chi^2(1, n = 99) = 8.35, p = .004, w = 0.29\). Similarly, the proportion of correct identifications (see Table 1) was lower for initial choosers than initial nonchoosers, \(\chi^2(1, n = 73) = 3.99, p = .046, w = 0.23\), and witnesses who did not view the initial lineup, \(\chi^2(1, n = 99) = 5.95, p = .015, w = 0.25\).

These results suggest that cognitive biases (i.e., commitment and confirmation bias) influenced initial choosers’ identification decisions for a second lineup. However, an alternative explanation for the results of Study 1a is that initial choosers simply had, on average, poorer memories for the culprit than did other witnesses. Poor memory for the culprit, like cognitive bias, would be expected to produce fewer positive identifications and correct identifications from a target-present lineup.

The results of Study 1b rule out this explanation. Numerous models of recognition decisions hold that weaker memory for targets is associated with a higher proportion of false positive responses to foils, either because respondents set a more lenient decision criterion when memory for targets is weak (e.g., Cary & Reder, 2003; Stretch & Wixted, 1998, Experiment 1) or because weaker memory results in a worse memory representation of targets which, in turn, increases the amount of evidence in favor of choosing foils (e.g., McClelland & Chappell, 1998; Shiffrin & Steyvers, 1997). Based on these models, if initial choosers simply had poorer memories for the culprit than initial nonchoosers and control witnesses, then we would expect them to make not only fewer correct identifications from target-present lineups but also more foil identifications from target-absent lineups. This was not the case. For target-absent lineups (Study 1b), planned comparisons showed that the proportion of foil identifications made by initial choosers did not differ significantly from that made by initial nonchoosers, \(\chi^2(1, n = 79) < 1, w = 0.01\), or witnesses who did not view a blank lineup, \(\chi^2(1, n = 117) = 1.14, p = .286, w = 0.10\). In fact, for the latter comparison, the pattern of identification responses indicates that any trend was toward initial choosers.
making fewer foil identifications than the control group. These results are consistent with the notion that initial choosers did not merely have poorer memories for the culprit than other witnesses.

The response latency data provided further evidence that cognitive bias influenced responses made by initial choosers. The distributions of response latencies for lineup rejections were positively skewed. Performing inferential analyses using logarithmic latency values made no difference to any results, so raw response latencies are reported for ease of interpretation. Descriptive statistics for response latencies are shown in Table 2. For target-present lineups, planned comparisons revealed that incorrect rejections were made faster by initial choosers than by initial nonchoosers, t(33) = −3.01, p = .005, f = 0.53 and witnesses who did not view the initial lineup, t(39) = −2.35, p = .024, f = 0.41. As with the identification response data, it could be argued that this pattern of response latencies might be explained by initial choosers having, on average, poorer memories for the culprit than other witnesses. However, the response latency data for target-absent lineups are not consistent with this explanation. Correct rejections of target-absent lineups were faster for initial choosers than witnesses who did not view a blank lineup, t(66.86) = 3.82, p < .001, f = 0.47. And, although there was no significant difference in response latency between initial choosers and initial nonchoosers, t(51) = −1.51, p = .138, f = 0.21, the pattern of means was opposite what would be expected if initial choosers had poorer memories for the target than initial nonchoosers.

Descriptive statistics for confidence ratings accompanying lineup rejections are displayed in Table 2. For target-present lineups, planned comparisons showed that identification confidence for incorrect lineup rejections did not differ significantly between initial choosers and initial nonchoosers, t(39) < 1, f = 0.06, or initial choosers and initial nonchoosers, t(33) = 1.63, p = .113, f = 0.28, although with the latter comparison there was a trend toward higher confidence for initial choosers. For target-absent lineups, there was no significant difference in identification confidence between initial choosers and witnesses who did not view a blank lineup, t(68) < 1, f = 0.02, or initial choosers and initial nonchoosers, t(41.42) = −1.33, p = .190, f = 0.19.

The interpretation of identification evidence. Table 3 shows diagnosticity ratios for suspect identifications in Wells (1984), and Studies 1a and 1b.
(1984) and Studies 1a and 1b. Estimated standard errors for diagnosticity ratios, derived using a modified jackknife procedure (Koriat, Lichtenstein, & Fischhoff, 1980; Weber & Brewer, 2006), are also displayed in Table 3. There was no designated suspect for the target-absent lineups used by Wells or in Study 1b. Following Brewer and Wells (2006), we estimated the foil identification rate for target-absent lineups by dividing the foil identification rate by the number of lineup members (i.e., six in all cases).

Three aspects of the overall diagnosticity data are noteworthy. First, the basic pattern of diagnosticity ratios found in Wells’ (1984) data was replicated in the overall diagnosticity ratios for Studies 1a and 1b. Diagnosticity for suspect identifications was highest for initial nonchoosers, followed by witnesses who did not view a blank lineup, then initial choosers. Second, in both Wells’ and our data, the diagnosticity ratios for initial choosers were greater than one. Thus, although suspect identifications made by initial choosers were less informative than those made by other witnesses, they were not completely uninformative. Third, the advantage for initial nonchoosers over other witnesses was not as striking in our research as in Wells’ experiment. Thus, compared to Wells’ data, Studies 1a and 1b imply that blank lineup responses should not have quite so much bearing on the interpretation of suspect identifications. In the General Discussion section, we consider why this difference between studies may have arisen, and how these results might guide the development of policy.

For initial choosers and nonchoosers in Studies 1a and 1b, we also calculated diagnosticity ratios separately for those who made their blank lineup response with higher (≥60%) versus lower confidence (<60%) as determined by a median split. These are shown in Table 3. The diagnosticity ratios for suspect identifications made by higher and lower confidence initial choosers were very similar. However, the diagnosticity ratios for initial nonchoosers suggest that suspect identifications made by higher confidence initial nonchoosers were more diagnostic than those made by lower confidence initial nonchoosers. The practical implications of these results will be discussed further in the General Discussion section.

In sum, Studies 1a and 1b provided evidence that a witness’s response to a blank lineup, and the confidence with which that response is made, can aid the interpretation of identification responses to a second, suspect-present lineup. Furthermore, the identification response and latency data obtained in Studies 1a and 1b suggest that at least some of the differences in identification response patterns between initial choosers and other witnesses can be attributed to cognitive biases such as confirmation bias and commitment effects.

Study 2

Studies 1a and 1b suggest that cognitive biases contribute to the difference in identification performance between initial choosers and initial nonchoosers. With this in mind, our aim in Study 2 was to directly test Wells’ (1984) conclusion that initial choosers have, on average, poorer memories for the culprit than do initial nonchoosers. In order to isolate differences in memory quality from the effects of cognitive biases, we created conditions under which response criterion could not vary between initial choosers and nonchoosers. We did this by modifying the design used in Study 1 such that all witnesses were required to make a positive identification from the second (culprit-present) lineup. Under these conditions, a lower correct identification rate for initial choosers (vs. initial nonchoosers) cannot be attributed to the influence of commitment effects or confirmation bias.

We also examined the confidence-accuracy relationship for responses to the culprit-present lineup in Study 2. In the eyewitness identification literature, correct identifications tend to be made with greater confidence than foil identifications (e.g., Brewer & Wells, 2006; Sauer, Brewer, Zweck, & Weber, 2010; Sporer, Penrod, Read, & Cutler, 1995). Some researchers have argued that witnesses are less able to use confidence to distinguish correct from incorrect responses when memory for the culprit is relatively poor (i.e., the optimality hypothesis; Bothwell, Brigham, & Dellenbacker, 1987; Dellenbacker, 1980). According to this perspective, if initial nonchoosers have better memories for the culprit than do initial choosers, then the difference in confidence between correct identifications and foil identifications should be greater for initial nonchoosers than initial choosers.

Participants in Study 2 viewed a mock-crime and were asked to identify the culprit via a blank lineup procedure (a blank lineup followed by a culprit-present lineup). All participants were required to make a positive identification from the second lineup.

Method

Participants. Participants comprised 200 undergraduate students (predominantly Caucasian; 150 female; aged 17–56 years, \(M = 24.13, SD = 7.73\)).

Materials and procedure. The mock-crime video and lineup photographs for Study 2 were identical to those used in Study 1. Data were collected in classroom settings on four different occasions with approximately 40-60 participants per occasion. Participants viewed the stimulus materials on a large screen and made their responses via pencil and paper. The lineup instructions for Study 2 were identical to those used in Study 1 with one exception. Prior to viewing the culprit-present lineup, the experimenter informed participants that they were required to choose one of the faces in the lineup, and added, “If you think the male who was wearing a red shirt is in the lineup, please select his face. If you think the person is not in the lineup, please select the face of the person who most closely resembles him.” Participants were not provided with a not present response option for the culprit-present lineup. As per Study 1, participants rated their confidence in the accuracy of their identification decisions on an 11-point scale (0% = not at all confident to 100% = completely confident). Response latency could not be recorded in the classroom settings.

Results and Discussion

Identification responses. From the initial target-absent lineup, 88 witnesses (44.0%) identified a foil and 112 (56.0%) correctly rejected the lineup. Consistent with the idea that initial choosers had poorer memories of the culprit than initial nonchoosers, 2 (blank lineup status) × 2 (accuracy) contingency table analyses showed that initial choosers (55.7%) made fewer correct identifications than initial nonchoosers (69.6%) from the second, culprit-present lineup, \(\chi^2(1, n = 200) = 4.14, p = .042, \text{w} = 0.14\).

The confidence-accuracy relationship. The descriptive statistics for identification confidence ratings are displayed in
Table 4. A 2 (initial response) × 2 (accuracy) analysis of variance (ANOVA) on identification confidence ratings yielded a significant main effect of accuracy, $F(1, 196) = 24.93$, $p < .001$, $f = 0.40$, with correct identifications accompanied by higher confidence ratings than foil identifications. Of greater interest, the interaction was also (marginally) significant, $F(1, 196) = 3.79$, $p = .053$, $f = 0.17$. Follow up analyses showed that correct identifications were made with greater confidence than foil identifications for initial nonchoosers, $t(110) = 5.25$, $p < .001$, and initial choosers, $t(86) = 2.00$, $p = .049$. However, the associated effect sizes indicated that the difference in confidence between correct identifications and foil identifications was greater for initial nonchoosers ($f = 0.60$) than for initial choosers ($f = 0.22$).

The results of Study 2 are consistent with the idea that initial choosers had, on average, poorer memories for the culprit than did initial nonchoosers. In turn, these results suggest that the poor performance of initial choosers (relative to initial nonchoosers) in the blank lineup paradigm is due in part to poorer memory for the culprit.

**General Discussion**

Despite evidence that the blank lineup procedure may be a useful tool for evaluating the likely accuracy of eyewitness identification decisions (Wells, 1984), it has not been widely used or researched. However, the increasing capacity to conduct computer-administered photo-lineups provides opportunities to make greater use of blank lineups. Therefore, it is important to understand the factors that influence identification decisions in the blank lineup paradigm and, in particular, the differences between initial choosers and initial nonchoosers. Prior research has shown that initial choosers make fewer correct responses to a second, suspect-present lineup than initial nonchoosers or witnesses who did not view a blank lineup (Wells, 1984). Our first aim in the present research was to explore the differences between initial choosers and nonchoosers that underpin this pattern of identification responses. In Studies 1a and 1b, initial choosers did not make more positive identifications from a second, target-absent lineup than other witnesses, and lineup rejections were made faster by initial choosers than other witnesses. These results suggest that at least some of the differences in identification performance between initial choosers and other witnesses were due to the effects of cognitive biases, such as commitment effects and confirmation bias. Compared to other witnesses, initial choosers were more inclined to reject a second lineup than to make a positive identification.

Furthermore, the results of Study 2 are consistent with the idea that initial choosers do have, on average, poorer memories for the culprit than do initial nonchoosers. A direct test of this idea was necessary in light of the results of Studies 1a and 1b. It is important to note that the poor performance of initial choosers, relative to initial nonchoosers, in Study 2 emerged under conditions where performance could not have been influenced by differences in response criterion. By providing evidence of cognitive bias effects (in Studies 1a and 1b) and poorer memory for the culprit for initial choosers relative to initial nonchoosers (Study 2), this research contributes to a more comprehensive understanding of the cognitive processes that affect identification decisions in the blank lineup paradigm.

Our second aim in this research was of a more applied nature: we were interested in whether the blank lineup procedure could aid the evaluation of identification evidence. The results of Studies 1a and 1b, and a reanalysis of Wells’ (1984) data, suggested that the diagnosticity of suspect identifications was highest for initial nonchoosers, followed by witnesses who did not view a blank lineup, then initial choosers. Furthermore, for initial nonchoosers, diagnosticity was greater for those who rejected the blank lineup with higher (vs. lower) confidence. These patterns of diagnosticity ratios have implications for the development of policy to guide the interpretation of identification evidence obtained using the blank lineup procedure. They suggest that by taking witnesses’ blank lineup responses into account, investigators and jurors may be able to more accurately estimate the likely guilt of suspects. Although it may prove difficult to develop specific guidelines for interpreting blank lineup responses, the results highlight some issues that legal professionals should be aware of, and which will likely aid decision making in legal settings. For example, in police investigations, if the witness previously rejected a blank lineup (especially if the rejection was made with reasonably high confidence), investigators might require less corroborating evidence before deciding to pursue the case. In contrast, if the witness previously selected a foil from a blank lineup, investigators should be relatively reluctant to press charges without a substantial amount of corroborating evidence. In a similar vein, witnesses’ responses to blank lineups should be taken into account in the courtroom. For example, in cases where the defendant was identified by a witness who previously viewed a blank lineup, jurors might require more additional evidence to establish guilt beyond reasonable doubt if the witness chose a foil from a blank lineup as opposed to rejecting a blank lineup.

A second policy implication concerns the treatment of identification evidence from initial choosers. The diagnosticity data in Studies 1a and 1b, and the identification response data in Study 2 suggest that identification evidence obtained from initial choosers should be treated as less credible than that obtained from initial nonchoosers. However, the diagnosticity ratios for initial choosers in this research and Wells (1984) were above 1. This indicates that suspect identifications made by initial choosers, although not as informative as those made by initial nonchoosers, were informative to some extent. Contrary to the notion that witnesses who choose a foil from a target-absent lineup should be discarded (e.g., Lindsay & Wells, 1985; Steblay, Dysart, & Wells, 2011), this finding suggests that initial choosers’ decisions should be taken into account, but with less weighting. It is important to note that policy consistent with this idea would address some concerns about using blank lineups in police investigations. In at least some cases, investigators have been reluctant to conduct blank lineups.
(e.g., United States v. Tyler, 1989), presumably in part because of the assumption that witnesses would have to be discarded if they chose from a blank lineup.

It must be stressed that the two aforementioned policy implications are accompanied by two important caveats. First, the blank lineup must be presented in the same manner as a suspect-present lineup. Witnesses should receive the same lineup instructions they would normally receive (i.e., the witness should be cautioned that the person they are looking for may or may not be in the lineup, and given instructions about how to make their response) and nothing about the instructions or manner of the administrator should alert the witness to the possibility that the lineup is not genuine. This was the case in Studies 1a and 1b, and it is unlikely that the results obtained in these studies would generalize to situations where the witnesses doubted the authenticity of the blank lineup. Second, although the results of Studies 1a and 1b (along with those of Wells, 1984) indicate that suspect identifications made by initial nonchoosers are more likely to be correct than those made by other witnesses, the data by no means suggest that suspect identifications made by initial nonchoosers are always correct. Indeed, in Studies 1a and 1b, several highly confident initial nonchoosers made incorrect positive identifications. Thus, the results in no way imply that a suspect identification made by an initial nonchooser (even a highly confident one) should be taken as definite proof of guilt.

A third policy implication is that blank lineup responses should be presented in court as a matter of standard practice so that jurors are presented with an appropriate representation of the witnesses’ identification decision. In United States v. Tyler (1989), the prosecution presented evidence that a witness had selected the defendant from a police lineup and reported 100% confidence that this person was the culprit. However, this witness had previously chosen a foil from a blank lineup with 90% confidence, a fact which emerged only under cross-examination. To the extent that a witness’s blank lineup response constitutes Brady material (Brady v. Maryland, 1963), the prosecution is obliged to disclose it to defense counsel; it is then the responsibility of the defense to inform the court of this information. Given that a witness’s blank lineup response should shape jurors’ evaluations of identification evidence, we argue that this duty should not be left to defense attorneys; rather, policy should require that the jury be made aware of blank lineup evidence.

A fourth policy issue relates to feedback that might be given to initial choosers during the blank lineup procedure. The results of Studies 1a and 1b demonstrated that initial choosers were reluctant to make a positive identification from a second lineup, resulting in a low correct identification rate for target-present lineups. An intuitive response to these results might be to inform initial choosers that the initial lineup did not contain a suspect. However, Palmer, Brewer, and Weber (2010) showed that providing accurate feedback to initial choosers (informing them that their previous identification response was incorrect) can impair identification performance on a second test for the same culprit. Thus, although it may be counterintuitive, investigators should avoid giving feedback to initial choosers.

Finally, this research provided a replication of Wells’ (1984) central findings. The basic pattern of diagnosticity ratios for Studies 1a and 1b was the same as for Wells’ data, although the advantage for initial nonchoosers over other witnesses was not as great. Why might this difference in magnitude have arisen? There were several differences in methodology between our studies and Wells’. First, the different conditions in Studies 1a and 1b were not as similar as the corresponding conditions in Wells’ experiment. In our studies, participants in the blank lineup condition were told that they would view two lineups, whereas the control group only expected one lineup. Although there were four possible targets in the stimulus video, and participants were not told that both lineups would be for the same culprit, it is possible that some participants might have assumed that they would be trying to identify the same person from both lineups. This would likely reduce choosing from the blank lineup. Second, as noted earlier, the selection of foils for the blank lineup differed slightly between Studies 1a and 1b, whereas Wells’ culprit-absent and culprit-present conditions used the same blank lineup. Third, the blank lineup used by Wells was biased, containing only one plausible candidate who matched the physical description of the culprit in terms of height, weight, hair color, and facial hair. In contrast, our research used unbiased blank lineups, with each lineup member matching the description of the culprit. Unbiased blank lineups appear to be the norm when the blank lineup procedure has been used in criminal investigations (e.g., United States v. Tyler, 1989).

The latter difference in methodology may have produced the difference in magnitude of diagnosticity patterns between our research and Wells’ (1984). When presented with a second lineup in which every member matched the culprit’s description, some witnesses may have formed the impression that the earlier lineup (in which only one person matched the culprit’s description) was perhaps not a genuine one. If so, some initial choosers may have assumed that their initial response was incorrect, and some initial nonchoosers may have assumed that their initial response was correct. This would likely have impaired initial choosers’ performance, and enhanced initial nonchoosers’ performance, on the second lineup (Palmer, Brewer, & Weber, 2010), which would increase the discrepancy in diagnosticity ratios between initial choosers and initial nonchoosers.

**Conclusion**

This research advances theoretical understanding of the blank lineup paradigm by demonstrating that (a) cognitive biases and (b) differences in quality of memory for the culprit contribute to the differences in identification performance between initial choosers and nonchoosers. The results also provide evidence that the interpretation of identification evidence can be enhanced by taking into account witnesses’ responses to a blank lineup. This research suggests that the blank lineup procedure has the potential to aid decision making in police investigations, courtroom settings, and legal settings, and it provides the basis for some important policies to guide the use of blank lineups in such settings.

**References**


