



## Do pre-admonition suggestions moderate the effect of unbiased lineup instructions?

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We examined the additive and interactive effects of pre-admonition suggestion and lineup instructions (biased or unbiased) on eyewitness identification rates. Participants watched a mock crime video, completed a target-absent lineup identification, and completed a retrospective memory questionnaire. Prior to attempting an identification, participants were either exposed or not exposed to pre-admonition suggestions and received biased or unbiased lineup instructions. The pre-admonition suggestion indicated that it was likely that the perpetrator was in the lineup (surely, you can pick the perpetrator). The pre-admonition suggestion increased false identification in the unbiased lineup condition. Furthermore, those who received the pre-admonition suggestion were more certain in their identifications as well as other testimony-relevant judgments than were those who did not receive the pre-admonition suggestion. These results suggest that pre-lineup suggestion can mitigate the beneficial effects of unbiased lineup instructions.

The recently released Innocence Project report, celebrating the 258th DNA-based exoneration, reinforced the now familiar theme that mistaken eyewitness identification is a common precursor to conviction of the innocent (Innocence Project, 2010). The report states that at least 76% of these wrongful convictions contained a mistaken identification. In 38% of these mistaken identification cases, multiple witnesses mistakenly identified the innocent suspect.

In recognition of the link between mistaken identification and conviction of the innocent, law enforcement agencies, judicial task forces, and professional associations have issued guidelines designed to improve the quality of identification procedures and thereby reduce the risk of false identification (e.g., Technical Working Group, 1999; Wells, Memon, & Penrod, 2006; Wells & Quinlivan, 2009; Wells *et al.*, 1998). Although there is some variation with respect to the specific recommendations put forth

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in these guidelines (particularly with respect to the use of sequential presentation and double-blind lineups), one recommendation appears to be ubiquitous: the investigator conducting the lineup should instruct the eyewitness in an unbiased manner. Unbiased instructions at the very least explicitly acknowledge that the actual perpetrator may not be present in the lineup and suggest that it is important avoid implicating innocent suspects. This recommendation conforms to a substantial body of research, as summarized next.

Malpass and Devine (1981) examined the influence of lineup instructions on identification decisions. After watching a staged crime, eyewitnesses received biased or unbiased instructions before viewing either a target-present or a target-absent lineup. Biased instructions did not explicitly mention that the perpetrator might not be present in the lineup. Malpass and Devine found that, in the target-absent condition, 78% of the participants who received biased instructions made incorrect identifications, whereas only 33% of the participants who received unbiased instructions made incorrect identifications. In the target-present condition, eyewitness accuracy did not vary significantly as a function of lineup instructions.

In the 15 years following the publication of the Malpass and Devine (1981) study, two additional meta-analyses examined and supported the original findings (Clark, 2005; Steblay, 1997). Steblay's meta-analysis demonstrated that, among eyewitnesses who viewed a target-absent lineup, unbiased instructions produced significantly less incorrect identification than did biased instructions. Clark (2005) re-examined the studies from Steblay's meta-analysis and removed a study that was statistically determined to be an outlier. The removal of the outlier produced similar results for target-absent lineups but showed that biased lineup instructions led to significant increases in correct identifications. Although the two meta-analyses differed in their conclusions concerning the effect of biased lineup instructions on eyewitness performance in target-present conditions, the two meta-analyses came to the same conclusion regarding target-absent lineups: unbiased instructions reduce the risk of false identification.

Thus, as evidenced by meta-analytic findings and the adoption of unbiased lineups in best practice guidelines, the conclusion that unbiased instructions mitigate the risk of false identification is accepted. The recommended use of unbiased lineup instructions is sensible and non-controversial. Little research, however, has examined the boundaries of the effect of lineup instructions (Leach, Cutler, & Van Wallendael, 2009). Are there conditions in which unbiased lineup instructions lose their protective qualities? We surmised that one such set of conditions includes suggestive influence that can occur prior to the administration of unbiased instructions. We refer to this period as 'the pre-admonition phase', and we refer to suggestions made during this phase as 'pre-admonition suggestions'.

### **Pre-admonition suggestion**

Studies by Leippe and colleagues (Leippe, Eisenstadt, & Rauch, 2009; Leippe, Eisenstadt, Rauch, & Stambush, 2006) examined the influence of pre-admonition feedback and provided a theoretical framework for understanding its effects. Leippe *et al.* (2006) designed pre-identification to make the participant witness believe he or she had a memory about a witnessed event that was similar or dissimilar to the memory of a co-eyewitness. Participants who were given positive information regarding their memories for the event before a lineup identification were more certain in their decisions than were participants who received no feedback; however, Leippe *et al.* (2009) found that positive

pre-identification feedback had no effect on choosing rates, regardless of whether participants were or were not given a lineup admonition. Leippe *et al.*'s (2009; see also Leippe *et al.*, 2006) pre-admonition suggestion was intended to enhance participants' beliefs about their memory abilities. We extended their research by administering pre-admonition suggestion to lead the witnesses to believe that the perpetrator was in the lineup. Towards this end, we manipulated the pre-identification suggestion given by the lineup administrator.

### **Cue-belief model**

Leippe *et al.* (2009) proposed a cue-belief model to explain how memory feedback affects recognition accuracy and confidence. The model posits two factors that govern memory and confidence judgments. The first is the strength of the memory trace, the degree to which individuals can access the memory trace and get an overall sense of familiarity between the item in memory and the to-be-remembered item. The second involves the subjective likelihood that memory is accurate. According to Leippe *et al.* (2009), strength cues determine the feeling of familiarity with an item. Likelihood cues determine the threshold at which the memory trace must match the test item in order for a person to accept that the item as previously seen. These cues also determine the confidence in witnesses' decisions. In order for an individual to judge an item as previously seen, the feeling of familiarity with the item must exceed the subjective likelihood threshold.

According to the cue-belief model, an individual's beliefs and assumptions about memory influence their decisions about the likelihood that their memories are accurate. Three factors affect these meta-memory judgments: intrinsic cues, self-credibility cues, and extrinsic cues. Intrinsic cues are factors that are present during acts of remembering and are associated with good or bad memory. Memory speed retrieval is one such cue. Individuals may realize that faster lineup decisions are associated with more accurate identifications (Weber, Brewer, Wells, Semmler, & Keast, 2004). If an individual immediately makes a lineup decision, the individual may infer based on his or her knowledge about memory that the identification is correct, and this may in turn make the individual more confident about his or her lineup decision.

Self-credibility cues are beliefs about one's own memory ability. People have different beliefs about their memory abilities: some people believe they have good memories, while others think that their memories are poor. One person's beliefs about his or her memory ability may affect his or her threshold for making a recognition decision as well as his or her confidence about this decision. Extrinsic cues communicate the ease or difficulty of a task. According to Leippe *et al.* (2009) lineup instructions are extrinsic cues. Biased lineup instructions may communicate to the witness that the culprit is present and that making an identification is the correct decision. Consistent with the predictions of cue-belief model, biased lineups lead to more choosing from lineups whether the culprit is in the lineup (Malpass & Devine, 1981; Steblay, 1997).

The cue-belief model predicts that any extrinsic cue, including the pre-admonition suggestion, should affect choosing rates in lineups. Like a biased instruction, a pre-admonition suggestion that the perpetrator is in the lineup is an extrinsic cue that communicates to the witness that the culprit is present and that choosing is the correct behaviour. This is especially true when a credible source, such as a police officer or lineup administrator, makes the suggestion. We know from the misleading post-identification

feedback research that misleading suggestions have a greater effect when given by a credible source (Dodd & Bradshaw, 1980; Neuschatz *et al.*, 2005; Smith & Ellsworth, 1987). Thus, according to the cue-belief model, a pre-admonition suggestion that the culprit is in the lineup may mitigate the positive effects of unbiased lineup instructions by increasing choosing without increasing identification accuracy. Specifically, the pre-admonition suggestion should lower the subjective likelihood threshold, and this should result in more choosing.

Accordingly, pre-admonition suggestions might be among the most harmful factors affecting eyewitness identifications. We predict that they will attenuate the effects of subsequent lineup instructions. We base this prediction not only on the cue-belief model but also on a qualitative difference between lineup instructions and pre-admonition suggestions. A lineup instruction is a formal procedure that indicates nothing about a specific eyewitness. Therefore, the unbiased instruction has a perfunctory tone; it is clear that it is a process performed in every case and that it has nothing in particular to do with any individual witness. Many police departments now give the unbiased instructions to witnesses in pre-printed written form (as we did in this experiment). The pre-admonition suggestion, however, has none of this routine or perfunctory character; by design, the statement appears to pertain to an individual witness in a particular case. Because of the particular and personal nature of the pre-admonition suggestion, we expected that eyewitnesses would interpret the pre-admonition suggestion to be more relevant than the lineup instructions to the particular case in question.

## **Method**

### **Participants**

Participants ( $N = 161$ ) in the study were introductory psychology students at a large Midwestern university. There were 39 participants in the biased/no pre-admonition suggestion condition, 37 participants in the unbiased/no pre-admonition suggestion condition, 43 participants in the biased/pre-admonition suggestion condition, and 42 participants in the unbiased/pre-admonition suggestion condition. All participants received compensation in the form of assignment credit for their classes. All procedures conformed to the American Psychological Association's ethical guidelines.

### **Design**

In a  $2 \times 2$  between-subjects design, we examined the effects of instructions (biased instructions vs. unbiased instructions) and pre-admonition suggestion (no pre-admonition suggestion vs. pre-admonition suggestion) on eyewitness choosing behaviour. The dependent variables of interest were identification accuracy (correct rejections vs. incorrect identifications) and participants' answers to a post-identification questionnaire.

### **Materials**

#### *Video*

Participants watched a 25 s simulated crime video in which a man steals a box from a storage unit. The culprit was a Caucasian, college-aged male with short dark hair, medium build, and no facial hair. During the video, the culprit enters the storage unit, looks around to see whether anyone is watching, takes a box, and leaves. The video simulates a realistic cell phone recording. The culprit's face is visible for 15 s.

*Lineup construction*

The strategy for lineup member construction was match to description. A separate small group of participants ( $N = 10$ ) described the characteristics of the perpetrator. Common responses related to skin colour, hair colour, weight, face shape, and eye colour. Next, a selection of 30 men fitting these descriptions were taken from a photograph database. All pictures were from students who had previously given written consent to have their picture used in future studies. Subsequently, a new group of participants ( $N = 25$ ) was asked to rate each of the 30 pictures in terms of how well they matched the description of the perpetrator. From these ratings, the six innocent suspects with the highest ratings appeared in the lineup.

To ensure that the lineup was fair and unbiased we calculated Tredoux'  $E$  and a measure of bias. A new group of 36 participants served as mock witnesses by spending a couple of minutes learning the description of the perpetrator (they never saw his face). They then viewed the target-absent lineup and selected the person that best matched the description. Participants' selections were combined to calculate Tredoux'  $E$  and lineup bias (Malpass, 1981; Tredoux, 1998). Tredoux'  $E$  is a measure of how many lineup members match the description of perpetrator. Tredoux'  $E$  has a minimum value of 1 and a maximum value of  $K$ , which is equal to the number of lineup members. If members of lineup receive fewer selections than is expected by chance, the value Tredoux'  $E$  will decrease towards one. Tredoux'  $E$  in the present experiment was 4.75. This means that almost five of the six lineup members matched the description of the perpetrator.

We also calculated lineup bias. Bias is the probability that the mock witness chooses the suspect at a rate significantly greater than chance by mock witnesses who only learn the description of the perpetrator and never see the perpetrator. Bias is the probability that the mock witness selected the suspect over the probability the innocent suspect is selected by chance alone. If this ratio is significantly different from chance, the lineup is biased. For the current lineup, the critical ratio was .075, which is not significant. Thus, the lineup was fair and unbiased.

*Post-identification questionnaire*

The 10-question witnessing experience questionnaire matched the Wells and Bradfield's (1998) questionnaire. Using seven-point Likert scales, the questions involved aspects of the witnessing experience, such as how confident participants were in their identification at the time they made it (1 = not at all confident; 7 = very confident), how good their view was (1 = very poor; 7 = very good), how well they could make out details of the culprit's face (1 = not at all; 7 = very well), how much attention they were paying to the culprit's face (1 = none; 7 = total attention), how easy or difficult it was to make an identification (1 = extremely easy; 7 = extremely difficult), how long it took to make an identification (1 = almost no time; 7 = long time), how clear the image of culprit's face was (1 = not at all; 7 = very clear), and how willing they would be to testify about their identification in court (1 = not at all willing; 7 = totally willing).

**Procedure**

After arriving at the laboratory, the participant read and signed the informed consent form. The experimenter informed the participant that he or she would view a video of a person standing inside a storage unit. The experimenter stated that the purpose of the study was to examine whether participants could make judgments about the

personalities of the person in the video by observing his non-verbal behaviour. After the video, the experimenter told the participants that, because another patron of the storage unit thought the man was acting suspiciously, the patron took precaution and used his cell phone to record the man's actions. The participants received the instruction to explain that an amateur recorded the incident as well as to make the stimuli seem more realistic. Before the lineup, the experimenter delivered the pre-admonition suggestion manipulation. The experimenter in the pre-admonition condition told participants, 'I could really tell you were paying a lot of attention; surely you are going to be able to pick the person out from the lineup'. Participants in the control condition did not receive any pre-admonition feedback. Experimenters told participants in both conditions that the goal was to complete an identification task.

Participants in the unbiased instructions condition then received a form stating that the lineup may or may not contain the photograph of the person who committed the crime. Participants read and signed the unbiased instructions form. Participants in the biased instruction condition received instructions that they would see a lineup and that their task was to choose the culprit. After receiving the biased or unbiased instruction, the participant viewed the target-absent lineup. The lineup was simultaneous. All lineup members appeared at the same time. The photographs contained numbers 1–6. The participant viewed the lineup, presented in Microsoft PowerPoint, and then indicated his or her choice on a separate piece of paper by marking an 'X' on the line next to the number corresponding to the person he or she believed was the culprit. After making the identification, the participant received the post-identification questionnaire. After the questionnaire, the participant completed another questionnaire containing several questions to ensure that the participant remembered the pre-admonition suggestion and the unbiased instruction. These questions served as manipulation checks. At the end of the experiment, the participant indicated whether he or she believed the video was real and was thanked and debriefed.

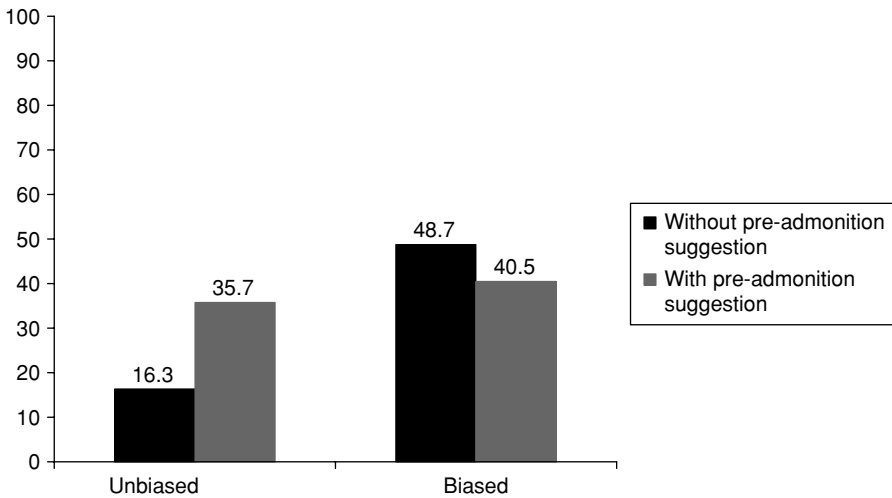
## Results

### **Manipulation checks**

Of those participants who received the unbiased instructions, eight indicated that they did not remember the instruction, and three participants indicated that they received unbiased instructions when they did not. We chose to retain these participants because actual investigations might include people who do not remember the lineup instructions. Removing these 11 participants from the data analysis did not change the pattern of the results. Everyone in the pre-admonition suggestion condition correctly reported the suggestion, and no participant in the pre-admonition suggestion condition incorrectly reported pre-admonition suggestion. In addition, all participants reported that the video was believable.

### **False identifications**

First, we examined the choosing rate for the designated innocent suspect. These are false identifications of the person taking on the role of innocent suspect and potentially the most problematic identifications. Such errors are precisely the type that can lead to wrongful convictions because the eyewitness has identified the person who the police suspect is the perpetrator. As shown in Figure 1, there were no significant



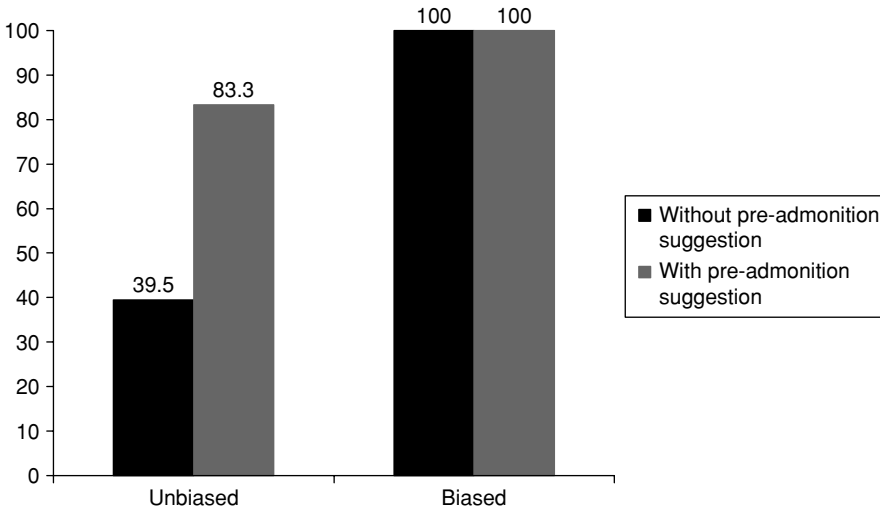
**Figure 1.** Percent false identifications of the innocent suspect per lineup instructions and pre-admonition suggestion.

differences in choosing between participants in the unbiased instruction/pre-admonition suggestion condition and the biased lineup conditions. In the unbiased instruction/no pre-admonition suggestion condition, only 16% of the participants chose the innocent suspect. With pre-admonition suggestion, participants chose the innocent suspect in 38% of the cases, regardless of instruction bias (see Figure 1). The innocent suspect in the unbiased instruction/no pre-admonition suggestion condition was chosen significantly less often than in any other experimental conditions, all  $\chi^2s(1, N = 85) > 6.13, p < .05, \phi = .27$ . More importantly participants chose the innocent suspect as often in unbiased instruction/pre-admonition suggestion as they did in the biased instruction/no pre-admonition suggestion,  $\chi^2s(1, N = 81) > 0.56, p < .45, \phi = .08$ , and biased instruction/pre-admonition suggestion,  $\chi^2s(1, N = 79) > 0.01, p < .95, \phi = .01$ .

In addition to the chi-square analyses, we also examined the risk ratio. The risk ratio is the ratio of two proportions and gives the conditional probability of one event relative to another (choice A is four times more likely than choice B). Howell (2009) argues that risk and odds ratios are better estimates of the relationship between categorical variables, because they go beyond simple significance tests and give the association between variables. The risk ratio for the innocent suspect revealed that participants in the unbiased instruction/pre-admonition suggestion condition were 3.2 times more likely to identify incorrectly the innocent suspect than were participants in the unbiased instruction/no pre-admonition suggestion condition.

### **Correct rejections**

The pattern of results for overall choosing was very similar to the results in the innocent suspect analysis (see Figure 2). Participants in the unbiased instruction/no pre-admonition suggestion condition correctly rejected the lineup more often than did participants in the other three experimental conditions. Of the participants in the unbiased instruction/no pre-admonition suggestion condition, only 39% made



**Figure 2.** Percent of choosing per lineup instructions and pre-admonition suggestion.

an incorrect identification. Over 83% made an incorrect identification in all other experimental conditions.

Surprisingly, we found no variation within two of the cells (biased instruction conditions). All participants in these conditions made false identifications. Because there are no statistical models or tests suitable when conditions have no variance, this presents a statistical problem. However, these models are not necessary to conclude that there is a meaningful difference between conditions. It is clear that the biased instruction conditions resulted in everyone making an incorrect identification from the lineup. Furthermore, the incorrect identification rate in the unbiased instruction/no suggestion condition (40%) was considerably lower than the other three conditions (see Figure 2). However, when participants were given the unbiased instruction with a pre-admonition suggestion that the culprit was in the lineup, incorrect identification rates were high (83%), similar to the biased instruction conditions. The incorrect identification rate in the unbiased instruction/no pre-admonition suggestion condition was significantly lower than the unbiased instruction/pre-admonition suggestion condition,  $\chi^2(1, N = 86) = 17.16, p < .01, \phi = .45$ . Thus, providing a pre-admonition suggestion that the culprit was in the lineup reduced the effect of the unbiased instructions. The risk ratio reveals that participants in the unbiased instruction/pre-admonition suggestion condition were 2.1 times more likely to make a lineup selection (incorrect identification) than were participants in the unbiased instruction/pre-admonition suggestion condition.

### **Retrospective certainty and other judgments for choosers**

The remaining analyses included only those participants who incorrectly chose someone from the lineup ('choosers'). We decided to include only choosers in the subsequent analyses because witnesses who do not make an identification at all would be unlikely to testify in court. Given the centrality of retrospective certainty in the eyewitness literature and its apparent impact on jurors, we conducted a separate analysis on the certainty measure. We conducted a 2 (biased instructions vs. unbiased instructions)  $\times$  2



(pre-admonition suggestion vs. no pre-admonition suggestion) ANOVA to assess the effects of the pre-admonition suggestion on witnesses' reports of how certain they were that they chose accurately from the lineup. The results revealed a main effect of pre-admonition suggestion ( $F(1, 124) = 20.63, p < .000, \eta^2 = .096$ ). The main effect for instructions ( $F(1, 124) = 0.01, p = .1, \eta^2 = .05$ ), and the interaction were not significant ( $F(1, 124) = 2.67, p = .1, \eta^2 = .02$ ). As can be seen in Table 1, participants who received the pre-admonition suggestion were more certain ( $M = 4.5$ ) in their identification than those who did not receive pre-admonition suggestion ( $M = 3.3$ ).

**Table 1.** Mean and standard error for witnessing experience variables

	Biased lineup instruction		Unbiased lineup instruction		Total (combined)	
	No suggestion	Suggestion	No suggestion	Suggestion	No suggestion	Suggestion
Certainty	3.6 (0.2)	4.5 (0.2)	3.4 (0.2)	4.2 (0.2)	3.6 (0.2)	4.6 (0.2)
View	4.6 (0.2)	5.3 (0.1)	4.6 (0.2)	5.0 (0.2)	5.1 (0.2)	5.2 (0.2)
Feature	4.3 (0.2)	4.7 (0.1)	4.0 (0.2)	4.4 (0.2)	4.4 (0.2)	4.6 (0.1)
Attention	4.0 (0.2)	4.8 (0.2)	3.8 (0.2)	4.5 (0.2)	4.2 (0.2)	4.3 (0.2)
ID ease	5.0 (0.2)	4.5 (0.2)	4.9 (0.2)	4.6 (0.2)	5.1 (0.2)	4.5 (0.2)
Time	4.5 (0.2)	3.9 (0.2)	4.5 (0.2)	4.3 (0.2)	4.6 (0.2)	4.0 (0.1)
Testify	2.7 (0.2)	3.2 (0.2)	2.5 (0.2)	3.4 (0.2)	2.6 (0.2)	3.4 (0.2)
Trust	3.8 (0.2)	4.4 (0.2)	3.7 (0.2)	4.1 (0.2)	4.0 (0.2)	4.6 (0.1)
Sight	4.6 (0.2)	5.1 (0.1)	4.5 (0.2)	5.1 (0.2)	5.0 (0.2)	5.2 (0.2)
Image	3.8 (0.2)	4.5 (0.2)	3.6 (0.2)	4.1 (0.2)	3.8 (0.2)	4.2 (0.2)

Note. Standard errors are in parentheses.

A 2 (biased instructions vs. unbiased instructions)  $\times$  2 (pre-admonition suggestion vs. no pre-admonition suggestion) MANOVA on the remaining retrospective certainty judgments showed the same pattern of results. The results revealed a main effect of pre-admonition suggestion ( $F(1, 113) = 3.01, p < .00, \eta^2 = .19$ ). The main effect for admonition ( $F(1, 113) = 1.54, p = .14, \eta^2 = .11$ ), and the interaction were not significant ( $F(1, 124) = 1.16, p = .32, \eta^2 = .08$ ). As can be seen in Table 1, participants who received the pre-admonition suggestion rated themselves higher on the witnessing experience questions (e.g., better view, paid more attention, more willing to testify, and so forth) than did those who did not receive pre-admonition suggestion.

## Discussion

In this experiment, pre-admonition suggestion ('surely, you can pick the perpetrator') increased choosing rates despite the use of unbiased instructions. Participants in the unbiased conditions who received the pre-admonition suggestion did not differ significantly in choosing rates from those participants in the biased lineup conditions. In the presence of pre-admonition suggestion, the unbiased instructions no longer demonstrated the protective qualities associated with eyewitness choosing rates. Participants who received the pre-admonition suggestion indicated that they were more certain in their identification as compared to participants who did not receive pre-admonition suggestion. Participants who received pre-admonition increased ratings on other testimony-relevant items. Specifically, these participants indicated that they had

a better view, that they had a better basis to make an identification and perhaps most importantly, these participants indicated that they were more willing to testify in court. The results are harrowing given that all participants saw the exact same event and all participants were incorrect. Moreover, the US Supreme Court has accepted these testimony-relevant variables as ones that jurors should use to assess the accuracy of an eyewitness (Manson v. Braithwaite, 1977). Recently, an article published by Wells and Quinlivan (2009) outlined the harmful effects of lineup administrator interactions on eyewitness retrospective memory. Thus, pre-admonition suggestion indicating that the perpetrator was in the lineup had three negative effects: it increased the risk of false identifications, it increased eyewitness confidence in their incorrect identifications, and most importantly, it increased witnesses' retrospective judgments on testimony-relevant variables. Combined this creates and eyewitness with inflated identification confidence, who is also more willing to testify in a court of law.

These findings are consistent with results from pre-lineup feedback studies (Leippe *et al.*, 2006, 2009). Leippe *et al.* (2006, 2009) found that simply informing participants that they did well on a pre-lineup identification task resulted in higher confidence reports for participants who chose from the lineup. Unlike Leippe *et al.*'s study, the current study employed pre-admonition suggestion that did not indicate anything specifically related to the participants' confidence. In contrast, we suggested to the participants that they possessed a special ability to *choose* someone from the particular lineup identification. We chose to use this manipulation because it was similar to statements made to eyewitnesses in actual cases, as we illustrate next.

Consider the case of Johnny Briscoe, who served 24 years in prison before DNA evidence exonerated him. The main evidence in the trial was the victim's mistaken eyewitness identification (Missouri v. Briscoe, 1984). When later questioned about the eyewitness identification procedure, the eyewitness revealed that investigators informed her that they had a man in custody with a violent past and a history of incarceration. While it was true that Briscoe was in police custody, he did not have a record of violence and had never served time in jail. The eyewitness did not recall receiving lineup instructions that the perpetrator may or may not be in the lineup. Would the lineup instructions have mattered in this case, or would the prior social suggestions between the detectives and the eyewitness have decreased the effects of the lineup instructions? Results of the current experiment suggest that such influence is a distinct possibility.

The cue-belief model provides an explanation of the effect of pre-admonition suggestion on choosing rates and confidence (Leippe *et al.*, 2009). The model assumes that the final memory decision is influenced by the item's familiarity and the individual's and beliefs about his or her own memory (intrinsic cues), the efficacy of their own memory (self-credibility cues), and relevant information that occurs during the testing phase (extrinsic cues). The pre-admonition suggestion that the perpetrator is in the lineup is an extrinsic cue that implies that the culprit is present and that choosing is the correct behaviour. Thus indicating that the perpetrator is in lineup should, according to the model, increase choosing rates and confidence. This is exactly the pattern of results found in the current study. The results suggest differential effects of pre-admonition suggestion and instruction bias consistent with the cue-belief model. The pre-admonition suggestions influence decision making regardless of whether the lineup instructions were biased or unbiased. The results suggest that pre-admonition suggestion and instructional bias operate in different ways when influencing eyewitness decision making, retrospective appraisals of confidence, and other testimony-relevant judgments. More specifically, it is possible that the differential effects are due to the

nature of the information provided to the participant. As we noted earlier, the lineup instructions may seem routine and generic, while the pre-admonition suggestion may seem to be specific to the eyewitness and the eyewitnesses' ability to make a correct lineup decision.

In conclusion, the finding that pre-admonition suggestion mitigated the beneficial effect of unbiased instruction is troubling, though the presence of a result in a single study hardly warrants alarm or policy changes. Moreover, the current study is limited in a number of important ways, including the use of a single crime and suspect, the use of only target-absent lineups, and the finding of no variance in identification accuracy in two design cells. The results however, do point to the need of additional research on factors that may qualify the beneficial effect of unbiased lineup instructions. Pre-admonition suggestion seems to be an important potential qualifying effect for further research.

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## References

- Clark, S. E. (2005). A re-examination of the effects of biased lineup instructions in eyewitness identification. *Law and Human Behavior, 29*, 395–424. doi:10.1007/s10979-005-5690-7
- Dodd, D. H., & Bradshaw, B. M. (1980). Leading questions and memory: Pragmatic constraints. *Journal of Verbal Learning and Verbal Behavior, 19*(6), 695–704. doi:10.1016/S0022-5371(80)90379-5
- Howell, D. C. (2009). *Statistical methods for psychology*. Belmont, CA: Cengage Wadsworth.
- Innocence Project (2010). *Understand the causes: Eyewitness misidentification*. Retrieved from <http://www.innocenceproject.org/understand/Eyewitness-Misidentification.php>
- Leach, A., Cutler, B. L., & Van Wallendael, L. V. (2009). Lineups and eyewitness identification. *Annual Review of Law and Social Science, 5*, 157–178. doi:10.1146/annurev.lawsocsci.093008.131529
- Leippe, M. R., Eisenstadt, D., & Rauch, S. M. (2009). Cueing confidence in eyewitness identifications: Influence of biased lineup instructions and pre-identification memory feedback under varying lineup conditions. *Law and Human Behavior, 33*, 194–212. doi:10.1007/s10979-008-9135-y
- Leippe, M. R., Eisenstadt, D., Rauch, S. M., & Stambush, M. A. (2006). Effects of social-comparative memory feedback on eyewitnesses' identification confidence, suggestibility, and retrospective memory reports. *Basic and Applied Social Psychology, 28*(3), 201–220. doi:10.1207/s15324834basp2803\_1
- Malpass, R. S. (1981). Effective size and defendant bias in eyewitness identification lineups. *Law and Human Behavior, 5*(4), 299–309. doi:10.1007/BF01044945
- Malpass, R. S., & Devine, P. G. (1981). Eyewitness identification: Lineup instructions and the absence of the offender. *Journal of Applied Psychology, 66*, 482–489. doi:10.1037/0021-9010.66.4.482
- Manson v. Braithwaite, 432 U.S. 98 (1977).
- Missouri v. Briscoe, 672 S.W.2d 370 (1984).
- Neuschatz, J. S., Preston, E. L., Burkett, A. D., Togliani, M. P., Lampinen, J. M., Neuschatz, J. S., . . . Goodsell, C. A. (2005). The effects of post-identification feedback and age on retrospective eyewitness memory. *Applied Cognitive Psychology, 19*, 435–453. doi:10.1002/acp.1084

- Smith, C., & Ellsworth, P. (1987). Patterns of appraisal and emotion related to taking an exam. *Journal of Personality and Social Psychology*, *52*(3), 475-488. doi:10.1037/0022-3514.52.3.475
- Stebly, N. M. (1997). Social influence in eyewitness recall: A meta-analytic review of lineup instruction effects. *Law and Human Behavior*, *21*, 283-298. doi:10.1023/A:1024890732059
- Technical Working Group for Eyewitness Evidence (1999). *Eyewitness evidence: A guide for law enforcement*. Washington, DC: United States Department of Justice, Office of Justice Programs.
- Tredoux, C. G. (1998). Statistical inference on measures of lineup fairness. *Law and Human Behavior*, *22*(2), 217-237. doi:10.1023/A:1025746220886
- Weber, N., Brewer, N., Wells, G. L., Semmler, C., & Keast, A. (2004). Eyewitness identification accuracy and response latency: The unruly 10-12-second rule. *Journal of Experimental Psychology: Applied*, *10*(3), 139-147. doi:10.1037/1076-898X.10.3.139
- Wells, G. L., & Bradfield, A. L. (1998). 'Good, you identified the suspect:' Feedback to eyewitnesses distorts their reports of the witnessing experience. *Journal of Applied Psychology*, *83*, 360-376. doi:10.1037/0021-9010.83.3.360
- Wells, G. L., Memon, A., & Penrod, S. D. (2006). Eyewitness evidence: Improving its probative value. *Psychological Science in the Public Interest*, *7*, 45-75. doi:10.1111/j.1529-1006.2006.00027.x
- Wells, G. L., & Quinlivan, D. S. (2009). The eyewitness post-identification feedback effect: What is the function of flexible confidence estimates for autobiographical events? *Applied Cognitive Psychology*, *23*(8), 1153-1163. doi:10.1002/acp.1616
- Wells, G. L., Small, M., Penrod, S., Malpass, R. S., Fulero, S. M., & Brimacombe, C. A. M. (1998). Eyewitness identification procedures: Recommendations for lineups and photospreads. *Law and Human Behavior*, *22*(6), 603-647. doi:10.1023/A:1025750605807

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