



Lineup administrator influences on eyewitness identification and eyewitness confidence



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ABSTRACT

Lineup administrators were trained to respond to witnesses in such a way as to redirect them from making non-identifications or foil identification responses toward making identifications of the suspect. Compared to a no-influence control condition, suspect identification rates in the influence condition increased substantially and proportionally for guilty and innocent suspects. Administrators steered witnesses more specifically toward the suspect when the suspect was guilty than when the suspect was innocent. Post-identification confidence for correct identifications of the guilty suspect did not differ significantly across the influence and no-influence groups. However, post-identification confidence for false identifications of the innocent suspect was significantly lower for the influence group than for the no-influence group because witnesses who were influenced to make false identifications tended to be those who were less confident prior to the lineup, and also because those witnesses became less confident from pre- to post-identification.

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1. Introduction

Eyewitness identification plays a complex role in the investigation of crime. Eyewitnesses provide evidence that is often instrumental to solving crime (Wellford & Cronin, 1999), but eyewitness identification errors have also contributed to many false convictions (Gross, Jacoby, Matheson, Montgomery, & Patil, 2005; Gross & Shaffer, 2012).

Although the witness's task is a cognitive one that draws on memory and decision-making, eyewitness identification decisions are also the product of a rich social context. The present research examines the fundamentally social nature of eyewitness identification, focusing on the interaction between the eyewitness who examines the lineup and the lineup administrator who shows that lineup to the eyewitness and records the response. The research builds on a well-established social psychological principle: One person's expectations can influence another person's behavior. These expectations produce a consistent result – an increase in the expected behavior (Rosenthal, 2002; Rosenthal & Rubin, 1978).

These expectancy effects have important implications for eyewitness identification. Much like the experimenter who has expectations about the results he or she should obtain, police officers may also have expectations about the eyewitness identification evidence they should obtain. To the extent that the police officer's expectations do influence the witness's identification

decision in a direction consistent with those expectations, the witness should be more likely to identify the person who is suspected by the police. This presents the criminal justice system with (at least) two problems: First, attorneys, judges, and juries may be misled or left to wonder about the extent to which such an identification is the product of the police officer's expectations rather than the eyewitness's memory. Second, if the police officer is wrong, and the suspect is not the person who committed the crime, then the identification of that suspect will be precisely the kind of eyewitness error that can result in false prosecution and conviction.

1.1. Mechanisms of administrator influence

There is widespread (perhaps universal) agreement that police officers should not assist or influence witnesses. This principle is explicitly stated, not only in recent law enforcement guidelines (Technical Working Group for Eyewitness Evidence, 1999), but also in guidelines written over 100 years ago (Alolf Beck Inquiry Committee, 1904). To the extent that police follow these directives, it is unlikely that they would make obvious or explicit statements to steer the witness toward the suspect. Thus, lineup administrator influence, to the extent that it occurs, is likely to be subtle and “under the radar.”¹ This creates a challenge for simulating

¹ Leonard and Rubin (2012) documented cases in Los Angeles in which the suggestiveness was decidedly not below the radar. The transcript of one such case, *People v. Morales*, is available at <https://www.documentcloud.org/documents/403117-marlon-morales-case-witness-interview.html>.

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these influences in an experimental setting, as it may be difficult to steer witnesses toward the suspect while appearing not to. Many eyewitness identification experiments recruit college students for the role of lineup administrator. Such inexperienced lineup administrators may be motivated to obtain suspect identifications, but lack the skills to obtain them while staying under the radar. This inexperience may explain why experiments comparing blind versus informed lineup administrators often obtain small, null, or inverse results (Greathouse & Kovera, 2009; Perlini & Silvaggio, 2007; Phillips, McAuliff, Kovera, & Cutler, 1999; Russano, Dickinson, Greathouse, & Kovera, 2006).

To deal with the potential inexperience problem, lineup administrators in the present study were given several hours of training over a 2-week period that prepared them to respond to witnesses' statements in ways that were suggestive, but did not overtly direct the witness to the suspect. To illustrate, consider a hypothetical case of a witness who examines a lineup for several seconds and then says, "I think it *might* be number three". If number three is the suspect, then the witness's response confirms the police officer's hypothesis about who committed the crime, in which case the lineup administrator may interpret the witness's statement as an unambiguous, positive identification. However, if number three is a foil, the lineup administrator may ask for "clarification". "I just want to make sure I understand you. Are you saying that number three is the guy, or that he *might* be the guy." To this the witness replies, "I think it might be him." "Okay," the lineup administrator says, "just take your time." After re-examining the lineup, the witness says, "I think it might be number four." In this case, number four is the suspect, and the lineup administrator hands the witness a pen, to "please circle number four, and put your initials right there."

The current experiment compared performance in two conditions, an *influence* condition in which lineup administrators, who knew the position of the suspect, and engaged witnesses in the kinds of interventions illustrated above, and a *no-influence* condition, in which the lineup administrators set up the identification procedure and then walked away, allowing the witness to examine the lineup and make an identification on his or her own.

1.2. Lineup administrator influence and eyewitness identification decisions

How will lineup administrator interventions affect the patterns of eyewitness identification responses in guilty-suspect (perpetrator-present) and innocent-suspect (perpetrator-absent) lineups? More specifically, how will these interventions affect the relative rates of suspect versus foil identifications, and how will they affect the relative rates of correct identifications of a guilty suspect versus false identifications of an innocent suspect?

The first question is about the specificity of what Greathouse and Kovera (2009) have called witness "steering". The lineup administrator's steering of the witness toward the suspect is *specific* to the extent that it increases only the rate of suspect identifications, with either no change or a decrease in the rate of foil identifications. Alternatively, the lineup administrator's interventions are *non-specific* to the extent that they increase both suspect and foil identification rates. This latter pattern of results would be consistent with witnesses simply lowering their decision criterion for making any identification (Clark, 2003; Wickens, 2002). Both patterns have been shown in the literature (Clark, Marshall, & Rosenthal, 2009; Greathouse & Kovera, 2009; Haw & Fisher, 2004). Of particular interest in the present study is whether the patterns of suspect and foil identifications vary across guilty-suspect versus innocent-suspect lineups.

The second question concerns the relative increases in correct identifications of guilty suspects versus false identifications of innocent suspects. At issue is whether lineup administrator

interventions increase correct and false identification rates proportionally, or disproportionately, with larger increases in false identification rates than correct identification rates. The issue has implications for legal proceedings and psychological theory. Regarding legal proceedings, the issue is about the probative value of suspect identification evidence. In this context, probative value refers to the extent to which the evidence distinguishes between suspects who are guilty versus suspects who are innocent. There are many ways to calculate the probative value of evidence (Clark, 2012; Clark, Howell, & Davey, 2008). For present purposes we will consider the conditional probability that the suspect is guilty, given that the suspect was identified, which is calculated as the correct identification rate divided by the sum of the correct and false identification rates, i.e., $\text{Correct}/(\text{Correct} + \text{False})$. Because this conditional probability increases with the decision criterion (see Clark, 2012; Mickes, Flowe, & Wixted, 2012), we will also report d' statistics calculated from correct and false identification rates, as a summary measure of accuracy.

1.3. Lineup administrator influence and eyewitness confidence

The U.S. Supreme Court, in *Neil v. Biggers* (1972) and *Manson v. Brathwaite* (1977), instructs trial courts to consider the witness's expression of confidence in determining whether the identification evidence will be admitted at trial. In addition, jurors are often instructed that they may consider the witness's confidence in assessing the reliability of that witness's identification testimony (following *U.S. v. Telfaire*, 1972), and indeed jury simulation research suggests that jurors do place considerable weight on witnesses' expressions of certainty (Cutler, Penrod, & Dexter, 1990; Cutler, Penrod, & Stuve, 1988), perhaps more than is warranted.

Wells and Quinlivan (2009) have proposed that witness confidence may be inflated by the suggestiveness of the procedures. Thus, according to their proposal, a suggestive procedure not only increases the risk of a false identification, but also increases the witness's confidence in that false identification, making it more likely that the false identification will be admitted at trial and will be convincing to the jury. The possibility of this one-two punch – increased risk of a false identification and increased confidence in that false identification – requires that research be directed not only at understanding how lineup administrator influence affects eyewitness decisions, but also at how it affects eyewitness confidence in those decisions.

Recent theories posit that eyewitness identification confidence is the product of memorial, meta-memorial, and social factors (Charman, Carlucci, Vallano, & Gregory, 2010; Leippe, Eisenstadt, & Rauch, 2009). These various factors may influence eyewitness confidence in two broadly defined ways: confidence *change* and confidence-based *redistribution*, which are discussed in turn.

1.3.1. Confidence change

Eyewitnesses may become more confident or less confident through their communication with the administrator. Administrator interventions may provide a mix of positive and negative feedback, which have been shown to inflate and deflate witness confidence, respectively (see Douglass & Steblay, 2006, for a meta-analytic review). Requests for clarification, for example, may be interpreted as negative feedback. Thus, the lineup administrator who asks, "Are you saying that number three is the guy, or that number three *looks similar* to the guy?" (followed by "take your time") may convey a clear message – "you're wrong – try again!" The final identification, however, may elicit positive feedback if the witness arrived at the correct answer. Garrioch and Brimacombe (2001) showed that confidence increased when the witness's identification was consistent with the expectations of the administrator.

1.3.2. Confidence redistribution

Lineup administrators may also induce a redistribution of high- and low-confidence witnesses across response categories. Confidence redistribution is illustrated through a simple question: Which witnesses are more likely to be influenced by the lineup administrator's interventions – those who, prior to the lineup, were more confident or those who were less confident in their ability to identify the perpetrator? If the lineup administrator interventions lead to more suspect identifications primarily from witnesses who were less confident to begin with, then the average confidence of a suspect identification would decrease relative to the no-influence group. Conversely, if administrator interventions lead to more suspect identifications primarily from witnesses who were more confident to begin with, then the average confidence of a suspect identification would increase relative to the no-influence group. The underlying mechanism is not that the interventions change the confidence of any given witness, but rather the interventions select a different group of witnesses who identify the suspect.

Empirical results have shown both higher and lower confidence due to witnesses' interactions with lineup administrators. Instructions to witnesses that suggest or explicitly state that the perpetrator is in the lineup have been shown to be associated with higher witness confidence (Leippe et al., 2009; Steblay, 1997). Conversely, Greathouse and Kovera (2009) reported lower confidence for witnesses who interacted with a non-blind lineup administrator than for those who interacted with a blind lineup administrator.

2. Method

2.1. Participants

One hundred and forty-four undergraduates from the University of California, Riverside participated in the experiment either to satisfy a course requirement for an introductory psychology class or for \$10. Only 11 participants chose the \$10. The mean age was 19.7 ($SD = 3.78$) and 51.4% were female. The demographic breakdown was: 36.8% Asian, 23.6% Hispanic, 21.5% Caucasian, 4.2% African American, .7% Native American, 13.3% Other.

2.2. Materials and procedure

Prior to the experiment, six undergraduate research assistants were trained as lineup administrators. They knew the position of the suspect and were led to believe that the suspect was guilty in all lineups (when in fact the suspect was guilty in only half of the lineups). The purpose of this ruse was to have the lineup administrators behave in the same way for both guilty-suspect and innocent-suspect lineups. To sell the ruse of all guilty-suspect lineups, two different videotapes were used, ostensibly for two different perpetrators, when in fact the videotapes were identical with the same perpetrator.

The study, conducted with one participant at a time, began by showing a video of an ATM robbery, filmed from the point of view of a passing witness. While passing through the commons area of a college campus the camera quickly turned to the sound of a male voice yelling and demanding money from a woman at an ATM. The perpetrator, a young Hispanic male, pointed a gun at the woman and took her money, remaining on camera for 7 s. After the video, participants were given a 15-min filler task which included the Big Five Inventory (John, Donahue, & Kentle, 1991) and were asked to provide a description of the robber. Participants were also asked to rate their pre-identification confidence in their ability to identify the perpetrator on a 1-to-6 scale.

Participants were then presented with either a guilty-suspect or innocent-suspect lineup, composed of photographs obtained from the San Bernardino County California Sheriff's department. Details of the lineup construction are as follows: First, a digital photograph and a brief description of the perpetrator were entered into an image-driven software system to produce a pool of mug-shots of individuals who matched the description and were similar in appearance to the perpetrator. Although the pool of foils was determined in part by the description of the perpetrator, the selection of foils from that larger pool was based on the similarity to the suspect. Guilty-suspect and innocent-suspect lineups were constructed by two different research assistants in order to minimize cross-contamination in the selection of foils. Suspect-matched lineups, by design, tend to be biased against the innocent suspect (Clark and Tunnicliff, 2001; Navon, 1992). Similarity ratings for the entire corpus of photographs (not just those used in these lineups) were obtained from a separate group of 195 participants, recruited from the same population as those who participated as witnesses. These similarity ratings were consistent with the bias inherent in suspect-matched foil selection. The average similarity of foils to the guilty suspect was 2.97 (on a 1-to-6 scale) and the average similarity of foils to the innocent suspect was 2.58. The position of the suspect in guilty- and innocent-suspect lineups was counterbalanced so that the suspect appeared equally often in each position.

Prior to the lineup, participants read and listened to recorded unbiased instructions which noted that the perpetrator of the crime may or may not be in the lineup. In the influence condition, trained lineup administrators interacted closely with each witness, guided by a general script that prepared them for how to respond to various eyewitness statements. The scripted responses of the administrators were written to simulate the situation where a police officer may be highly motivated to obtain an identification, and thus would exhibit biased and suggestive behavior. The general outline of the script is as follows:

If at any time a participant made a definitive identification (e.g. if a participant made a response without hedge-words or hesitation) whether it be a foil, suspect, or non-identification response, the administrators were instructed to record that decision and end the identification procedure. An identification of the suspect, whether definitive or filled with hedge-words, was also taken as a final response. Lineup administrators were trained to respond to non-responsiveness, tentative non-identification responses, and tentative foil identification responses. Non-responsiveness refers to a witness who says nothing, and examples of tentative non-identifications and foil identifications are "I don't think I see him," and "Number three (a foil) looks like him." In response to witnesses who were initially non-responsive, lineup administrators were instructed to intervene by simply stating, "If you see the guy, let me know, and if you're unable to make an identification, you need to let me know that, too." The point of this statement was to keep witnesses on task, and to frame a non-identification as a failure ("unable"). For witnesses who continued to be non-responsive, or who gave tentative non-identification responses, lineup administrators were instructed to make comments such as, "Take your time, there's no rush," and "Just look at all of the photographs carefully." Witnesses who continued to be non-responsive were asked, "Is there anyone who looks similar or stands out to you?"

Lineup administrators were instructed to treat "I don't know" responses and other expressions of uncertainty in the same way they treated tentative non-identifications or non-responsiveness. If the witness made any mention of a foil (that was not a definitive identification), administrators were instructed to ask for clarification. "Ok, so are you saying that number 2 is the guy or that number 2 is similar to the guy from the video?"

In the no-influence condition, the administrators were not present in the room while the witness viewed the lineup and made

Table 1
Identification responses for influence and no-influence conditions for guilty-suspect and innocent-suspect conditions.

	No influence		Influence	
	Guilty % (n)	Innocent % (n)	Guilty % (n)	Innocent % (n)
Suspect	36.1 (13)	13.9 (5)	77.8 (28)	36.1 (13)
Foil	36.1 (13)	25.0 (9)	11.1 (4)	30.6 (11)
No ID	27.8 (10)	61.1 (22)	11.1 (4)	33.3 (12)

Note. Each column presents the percentage (%) and frequency (n) of each response.

his or her identification response. All participants in the influence and no-influence conditions were videotaped. After participants made their identification decision, they were given a photo identification report sheet that asked for additional comments regarding their identification decision and were asked to provide a rating of how confident they were in that decision. Confidence was again measured on a scale of 1–6.

2.3. Design

The experiment utilized a $2 \times 2 \times 6 \times 6$ design, with influence condition, suspect guilt, suspect position, and lineup administrator as between-participants factors. Each lineup administrator conducted a complete counterbalanced replication of the experiment. The confidence analyses introduce an additional variable – pre-identification versus post-identification assessment of confidence, as a within-participants factor.

3. Results and discussion

Two sets of analyses examined the effects of lineup administrator influence on eyewitness identification decisions and the confidence that witnesses expressed in those decisions.

3.1. Eyewitness identification

Each identification response was categorized as a suspect identification, a foil identification, or a non-identification, and the response proportions are shown in Table 1, for guilty-suspect and innocent-suspect lineups, for both influence and no-influence conditions. Each analysis was conducted as 2×2 Chi-square, collapsing across administrators and suspect positions.

3.1.1. Overall identification rate

The overall identification rate (suspect and foil identifications), collapsed over guilty- and innocent-suspect lineups, was higher in the influence condition (.78) than in the no-influence condition (.56), $\chi^2(1, N = 144) = 8.00, p = .005, r = .24$. The increase in the overall identification rate was statistically significant for innocent-suspect lineups, $\chi^2(1, N = 72) = 5.57, p = .02, r = .28$, but slightly short of statistical significance for guilty-suspect lineups, $\chi^2(1, N = 72) = 3.19, p = .07, r = .21$. The magnitude of the effect was slightly larger for innocent-suspect lineups ($r = .28$) than for guilty-suspect lineups ($r = .21$), but that difference was not statistically significant ($p = .34$).

3.1.2. Correct and false suspect identification rates

The correct identification rate for the guilty suspect was higher in the influence condition (.78) than in the no-influence condition (.36), $\chi^2(1, N = 72) = 12.75, p = .0004, r = .42$. The false identification rate of the innocent suspect was also significantly higher in the influence condition (.36) than in the no-influence condition (.14), $\chi^2(1, N = 72) = 4.74, p = .03, r = .26$.

3.1.3. Probative value

The probative value of a suspect identification [Correct/(Correct + False)] was .68 (28/41) in the influence condition, and .72 (13/18) in the no-influence condition. This very small difference in probative value was not statistically significant, $\chi^2(1, N = 59) = .09, p = .76, r = -.04$. We also calculated d' , from signal detection theory (see Green and Swets, 1966; Wickens, 2002), as another summary statistic representing discriminability between suspects who are guilty versus suspects who are innocent. The d' statistics showed slightly higher discriminability in the influence condition ($d' = 1.12$) than in the no-influence condition ($d' = .73$).

3.1.4. Foil identification rates

The foil identification rate was lower for the influence condition (.11) than for the no-influence condition (.36), for guilty-suspect lineups, $\chi^2(1, N = 72) = 6.24, p = .01, r = -.29$. However, for innocent-suspect lineups, the foil identification rate was slightly, but not significantly, higher for the influence condition (.31) than for the no-influence condition (.25), $\chi^2(1, N = 72) = .28, p = .60, r = .06$. The difference in effect sizes for guilty-suspect versus innocent-suspect lineups was statistically significant ($p = .03$). These results indicate that witness steering was more suspect-specific when the suspect was guilty than when the suspect was innocent.

3.1.5. Witness steering in guilty- and innocent-suspect lineups

We analyzed the videotapes of the interactions to determine witnesses' initial and final responses. Due to administrator errors and camera problems, several recordings were unusable, corrupted, or lost. Usable video data were available for 55 of 72 administrator-witness interactions in the influence condition (76 percent). The usable and unusable videos appear to be evenly distributed across conditions and outcomes such that the identification results for the 55 video recorded cases were very similar to the results for the full data set.

Thirty-two witnesses in the influence condition did not identify the suspect on their first response. This is the group whose initial responses may potentially be redirected toward the suspect. The proportion of initial responses that were not suspect identifications, but were re-directed into suspect identifications, was higher when the suspect was guilty (7/11 = .64) than when the suspect was innocent (4/21 = .19), $\chi^2(1, N = 32) = 6.36, p = .01, r = .45$. When the suspect was innocent, the redirected witnesses often missed the intended target (the suspect), and identified a foil instead, whereas when the suspect was guilty, redirected witnesses tended to correctly identify the suspect, rather than a foil, $\chi^2(1, N = 23) = 5.32, p = .02, r = .48$.

3.2. Eyewitness confidence

How did the interactions with lineup administrators affect witnesses' confidence in their identification decisions? To address this question, two confidence ratings were obtained from each participant: a pre-identification confidence rating obtained prior to viewing the lineup and a post-identification confidence rating obtained after the witness made his or her final response.

As preliminary analyses we conducted two $2 \times 2 \times 6$ ANOVAs, one for pre-identification confidence and one for post-identification confidence. In both analyses, suspect guilt and influence condition were fixed factors and lineup administrator was a random factor. The pre-identification confidence analysis showed no main effects and no interactions ($.29 < p < .80$). This is as it should be because witnesses made their pre-identification confidence judgments before seeing the lineup and with only minimal interaction with the lineup administrator. A parallel analysis for post-identification confidence showed one significant effect: post-identification confidence was lower for witnesses

Table 2
Mean (*M*) and standard deviation (*S*) for pre-identification confidence, post-identification confidence, and confidence change, for guilty- and innocent-suspect lineups in no influence and influence conditions.

	No influence						Influence					
	Guilty			Innocent			Guilty			Innocent		
	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change
Suspect												
<i>M</i>	3.846	3.539	−0.308	4.200	4.600	0.400	3.500	3.375	−0.125	3.539	2.692	−0.864
<i>S</i>	1.068	1.050	0.751	1.924	1.140	0.894	1.291	1.176	1.345	1.266	1.109	1.068
Foil												
<i>M</i>	3.231	3.154	−0.077	3.444	3.444	0.000	2.250	3.000	0.750	2.546	2.546	0.000
<i>S</i>	1.301	1.144	1.706	1.236	0.882	1.500	1.258	2.309	1.708	1.036	1.036	1.000
Non ID												
<i>M</i>	2.700	3.333	0.667	3.182	3.364	0.182	3.750	2.500	−1.250	3.417	3.167	−0.250
<i>S</i>	1.494	1.581	1.118	1.097	1.706	1.680	0.500	0.577	0.500	1.621	1.642	1.215

Note. Cell sizes are shown in Table 1, except for non-identifications in the guilty-suspect, no-influence conditions, where the cell sizes were 10 for pre-identification confidence, and 9 for post-identification confidence, and 9 for confidence change.

in the influence condition ($M=3.02$) than for witnesses in the no-influence condition ($M=3.45$), $F(1, 5)=7.43$, $p=.04$. The implication is that the persistent interventions of lineup administrators led to a net reduction in witness confidence. None of the other main effects or interactions approached statistical significance ($.15 < p < .66$).

Next we present additional analyses that examined two underlying mechanisms – redistribution and confidence change for the influence and no-influence conditions. These mechanisms are tied to witnesses' identification responses, and thus the analyses were conducted separately for each identification response category, and then aggregated meta-analytically (Rosenthal, 1991). The relevant data, pre-identification and post-identification confidence, as a function of suspect guilt and identification response, are shown in Table 2.

3.2.1. Redistribution

The previous analysis showed that the influence and no-influence groups did not vary in their pre-identification confidence. However, inspection of Table 2 suggests that higher- and lower-confidence witnesses were distributed differently across identification responses for the influence and no-influence conditions. Specifically, for suspect and foil identification responses, pre-identification confidence was lower for witnesses in the influence condition than witnesses in the no-influence conditions, whereas for non-identification responses, pre-identification confidence was higher for witnesses in the influence condition than for witnesses in the no-influence condition. To statistically evaluate this pattern, we compared the influence and no-influence conditions, with independent samples *t*-tests, for each identification response, separately for guilty-suspect and innocent-suspect lineups, and then compared the z_r effect sizes for positive identification responses (suspect and foil identifications) to the z_r effect sizes for non-identification responses.² The analyses, summarized in the top panel of Table 3, produced $z=1.81$, $p=.04$ for guilty-suspect lineups, $z=1.58$, $p=.06$ for innocent-suspect lineups, and $z=2.40$, $p=.008$, aggregated across guilty- and innocent-suspect lineups. This pattern is consistent with the redistribution hypothesis. The increase in the identification rate in the influence condition was due to the addition of witnesses who, prior to the lineup, were less confident

in their ability to identify the perpetrator relative to the identifying witnesses in the no-influence condition. The witnesses in the influence condition who did not make an identification were those who, prior to the lineup, were more confident in their ability to identify the perpetrator relative to the non-identifiers in the no-influence condition.

3.2.2. Confidence change

To what extent did witness confidence change from pre-identification to post-identification for witnesses in the influence condition? To address this question we calculated the difference between post-identification confidence and pre-identification confidence, and evaluated the difference with one-sample *t*-tests, from which we calculated z_r effect sizes. The statistical analysis is summarized in the middle panel of Table 3. Aggregating across the z_r effect sizes for all six responses, post-identification confidence decreased slightly relative to pre-identification confidence, $z=1.55$, $p=.06$. Four of the six comparisons showed this confidence decrease; the only responses for which there were not decreases in confidence were for foil identifications in guilty-suspect lineups and foil identifications in innocent-suspect lineups. For four out of six comparisons, the changes in confidence from pre-identification to post-identification were very small or based on too few observations ($|t|'s < 1.0$). There were two exceptions. Confidence decreased from pre- to post-identification for witnesses who made a false identification of the innocent suspect, $t(12)=-2.86$, $p=.014$, $r=-.64$, and for witnesses who made a false non-identification when the suspect was guilty, $t(3)=-5.00$, $p=.015$, $r=-.95$. We will not discuss the false non-identification responses further, because the number of observations was very small ($n=4$), even though the effect size was very large. The false identifications, on the other hand, provide clear evidence of confidence change. These results suggest that when lineup administrators steered witnesses toward a suspect who was innocent, most of the witnesses who identified that innocent suspect became less confident. Specifically, 8 of 13 showed a decrease in confidence, 4 showed no change, and 1 showed an increase.

3.2.3. Post-identification confidence

To examine the net effect of these two confidence effects, post-identification confidence for witnesses in the influence condition was compared to post-identification confidence for witnesses in the no-influence condition, again for each identification response, for guilty-suspect and innocent-suspect lineups, using independent-samples *t* tests, from which we derived z_r effect sizes. The statistical analyses are summarized in the bottom panel of Table 3. For all six comparisons, post-identification confidence was

² One could analyze these results as an ANOVA with identification response as a factor. However, because identification response is a dependent variable, we meta-analytically aggregated effect sizes across identification responses. For comparison we did also conduct a $2 \times 2 \times 3$ ANOVA with suspect-guilt, influence condition, and identification response as factors. The patterns of results were identical.

Table 3

Analyses of pre-identification confidence, confidence change, and post-identification confidence, for suspect identifications, foil identifications, and no identification responses, in guilty-suspect and innocent-suspect lineups.

	Guilty suspect			Innocent suspect		
	<i>n</i>	<i>t</i>	<i>z_r</i>	<i>n</i>	<i>t</i>	<i>z_r</i>
Pre-identification confidence (influence versus no influence)						
Suspect identification	41	-.84	-.13	18	-.86	-.21
Foil identification	17	-1.33	-.32	20	-1.77	-.41
No identification	14	1.35	.38	34	.50	.09
Post-pre-identification confidence change (influence condition)						
Suspect identification	28	-.49	-.09	13	-2.86	-.75
Foil identification	4	.88	.48	11	0.00	0.00
No identification	4	-5.00	-1.78	12	-.71	-.21
Post-identification confidence (influence versus no influence)						
Suspect identification	41	-.43	-.07	18	-3.25	-.74
Foil identification	17	-.19	-.05	20	-2.06	-.47
No identification	13	-1.00	-.30	34	-.33	-.06

Note. *n* denotes the number of observations; for comparisons between influence and no-influence conditions, *t*-tests have *n* – 2 degrees of freedom (top and bottom panels); for confidence change, *t*-tests have *n* – 1 degrees of freedom (middle panel). Negative signs on *t* and *z_r* reflect a decrease in confidence; positive signs denote an increase in confidence.

lower in the influence condition than in the no-influence condition. The aggregation of *z_r* effect sizes across all six responses showed this general pattern to be statistically reliable, $z = -2.82$, $p = .002$. At the level of individual responses, most of the comparisons fell short of statistical significance. The two exceptions were for false suspect identifications, $z_r = -.74$, $p = .002$, and foil identifications, $z_r = -.47$, $p = .02$, in innocent-suspect lineups.

These three sets of analyses, for pre-identification confidence, confidence change, and post-identification confidence suggest that lineup administrator interventions may affect witness confidence in two ways. First, witnesses who make identifications as a result of such interventions may tend to be those whose confidence prior to the lineup was lower to begin with. Second, lineup administrator interventions may cause witnesses to feel less confident about their identification responses. These two confidence effects may combine such that post-identification confidence will be lower for witnesses who are pushed and steered relative to those who are not.

3.2.4. Confidence–accuracy relationship

Lineup administrator influence moderated the relationship between post-identification confidence and accuracy. Overall, the correlation between post-identification confidence and accuracy was $r = .104$ ($N = 143$), $p = .215$. This correlation was lower, and near zero for the no-influence condition, $r = -.016$ ($N = 71$), $p = .89$, and higher in the influence condition, $r = .25$, ($N = 72$), $p = .03$. These two correlations were not statistically different ($p = .11$). However, additional analyses revealed that these two patterns of correlation were due primarily to witnesses who identified the guilty or innocent suspect. For these witnesses the confidence–accuracy correlations were $-.43$ ($N = 18$, $p = .08$) in the no influence condition and $.27$ ($N = 41$, $p = .09$) in the influence condition. These correlations were significantly different from each other, $z = 2.40$, $p = .016$.

4. General discussion

Lineup administrator interventions resulted in large and roughly proportional increases in both correct identifications of the guilty suspect and false identifications of the innocent suspect. These increases were obtained even after the presentation of unbiased instructions, and without any explicit references to the suspect. Lineup administrators did not tell witnesses that they were required to make an identification and did not make any suspect-specific comments such as, “I noticed you paused on number three.” (Nettles, Nettles, & Wells, 1996). Rather, substantial

increases in suspect identifications arose from a combination of seemingly innocuous instructions, requests for clarification, and simple questions.

Although the increases in correct and false identification rates were roughly proportional, the patterns of suspect and foil identifications were different for guilty-suspect and innocent-suspect lineups. Foil identifications decreased in guilty-suspect lineups, but increased slightly in innocent-suspect lineups. A straightforward explanation for this pattern is that the guilty suspect was a relatively easier target toward which to be steered than was the innocent suspect. More broadly, it may be easier to steer people toward a correct response than an incorrect response. This is likely to be the case to the extent that the witness’s (partial) memory of the perpetrator distinguishes the guilty suspect from the lineup foils better than it distinguishes the innocent suspect from the lineup foils.

This pattern is likely to vary with the similarity relationships in the innocent-suspect lineup. In a fair lineup, the innocent suspect should not stand out from the foils, and should be no more likely to be identified than anyone else in the lineup. The lineups used in the present experiment were constructed with foils chosen to be similar to the suspect, because surveys have shown (Wogalter, Malpass, & M, 2004) and continue to show (Wise, Safer, & Maro, 2011) this to be common police procedure. It is also a procedure that can introduce compositional bias in innocent-suspect lineups (see Clark and Tunnicliff, 2000; Navon, 1992). Some of that bias was evident in our innocent suspect lineups. Even in the no-influence condition, 36% (5/14) of the witnesses who made any identification made an identification of the suspect. Had the lineups been unbiased such that the innocent suspect did not stand out, it might have been even more difficult for lineup administrators to steer witnesses toward the innocent suspect.

It is important to note that the relatively greater difficulty in steering witnesses toward a suspect who was innocent did not preclude a substantial increase in false identifications. The difference between guilty- and innocent-suspect lineups was not in the increase in suspect identifications, but rather in the specificity of the steering.

The results of the present study also provide an explanation for null results that have sometimes been obtained in studies comparing blind and non-blind lineup administration (see Russano et al., 2006 for a review). Greathouse and Kovera (2009), for example, showed negligible differences in correct and false identification rates comparing blind to non-blind lineup administration with simultaneous lineups and unbiased instructions. In all of the

blind/non-blind lineup studies, lineup administrators presented a lineup for the first time with little or no training. Without experience and training, the non-blind lineup administrator may know the desired response, and be motivated to obtain it, but not have the skills to do so. In other words, they may be able to *push* the witness to identify *someone*, but not be able to *steer* the witness specifically toward the *suspect*.

This distinction between pushing and steering may also account for results showing larger administrator influence effects for sequential lineups than for simultaneous lineups (Greathouse & Kovera, 2009; Phillips et al., 1999). For a sequential lineup, in which photographs are shown one at a time, the lineup administrator does not need to steer; a well-timed push (when the witness is looking at the suspect photograph) may suffice.

Post-identification confidence was lower for witnesses in the influence condition than for witnesses in the no-influence condition. This pattern held for all responses (suspect, foil, and non-identification) for both guilty-suspect and innocent-suspect lineups. However, the magnitude of the effects varied across responses as well as the guilt of the suspect. In particular, lineup administrator interventions appeared to have had little effect on the confidence of witnesses who made correct identifications. By contrast, false identifications were made with less confidence in the influence condition relative to the no influence condition, for two reasons. (1) The additional false identifications in the influence condition were obtained from witnesses who were less confident prior to the lineup, and (2) witness confidence decreased from pre-identification to post identification. The increase in the number of low-confidence false identifications produced a counter-intuitive result: the confidence-accuracy correlation was stronger in the influence condition than in the no-influence condition.

The decreases in confidence shown in the present study and by Greathouse and Kovera (2009) are inconsistent with Wells and Quinlivan's (2009) proposal that suggestiveness increases false identifications and the confidence witnesses express in those false identifications. In the present study false identifications increased, but confidence in those false identifications decreased. These results raise a question as to whether the relationship between suggestiveness, error, and confidence may vary with the source of the suggestiveness. It may be, for example, that biased instructions and biased lineups, increase confidence, consistent with Wells and Quinlivan (2009), whereas the suggestiveness of a persistent lineup administrator decreases confidence.

4.1. Practical application: implications for the criminal justice system

To the extent that police officers utilize procedures like those used in the present study, suspect identification rates would be expected to increase – both correct identifications of the guilty and false identifications of the innocent. In the present study, the increases in correct and false identification rates suggested a slight *increase* in discriminability between a suspect who was guilty versus a suspects who was innocent. This may be an example of what Clark (2012) described as a desirable outcome (an increase in discriminability) produced through undesirable means (manipulation of witnesses).

The trial court can exclude eyewitness identification evidence if it determines that the identification procedure was suggestive and if the “totality of the circumstances” suggests that the identification is not reliable (Manson v. Brathwaite, 1977). However, based on the admissibility decisions that trial courts typically make, it is unlikely that any of the procedures used here would be viewed as being so suggestive that trial courts would exclude the identification. There is nothing obviously suggestive about asking a witness, who has made an ambiguous statement, to clarify that statement.

The suggestiveness, of course, arises when such clarifications are requested only under some conditions (the witness's mention of a foil), but not others (any mention of the suspect). Likewise, there is nothing obviously suggestive about encouraging a witness to take his or her time, or to look at the lineup members carefully – unless that encouragement is offered only to witnesses who are leaning toward an “undesired” response (see also Clark et al., 2009). Thus, the suggestiveness of the procedures may not be apparent to the witnesses, the trial court, or the jury. It is for reasons such as these that eyewitness researchers have recommended that lineups be conducted by an administrator who is blind to the position of the suspect in the lineup (Greathouse & Kovera, 2009; Phillips et al., 1999; Wells et al., 1998; Wells, Steblay, & Dysart, 2012).

Our results were inconsistent with Wells and Quinlivan's (2009) proposal that suggestive procedures increase false identifications and confidence in those false identifications. The false identification rate was higher, but confidence was lower, in the influence condition than the no influence condition. The lower confidence could, at least in principle, raise an appropriate concern for the trial court about the reliability (and hence the admissibility) of the additional suspect identifications generated through suggestive influences. The lower confidence could also lead jurors to find the evidence to be less reliable. This assumes, of course, that the lower confidence is accurately documented, and/or that witnesses do not increase their confidence prior to their testimony at admissibility hearings or at trial, as a result of feedback indicating that their identification was correct (Wells & Bradfield, 1998).

4.2. Limitations and future research

The limitations of this study and the pathway for future research concern generality and representativeness. We should not be surprised to find that lineup administrator effects depend on a variety of memory, similarity, and decision factors. Future research, guided by theory, should systematically explore these factors.

The consideration of generality and representativeness applies to all eyewitness identification experiments. One aspect of this issue, however, applies uniquely to studies on lineup administrator influence. To what extent is experimental lineup administrator behavior representative of police behavior? The lineup administrators in the present study were given extensive training over a 2-week period. Nonetheless, the videotapes show that the lineup administrators, despite their training, sometimes rushed their lines, and sometimes appeared a bit awkward, trying to remember their lines, or trying to figure out how to respond to an unexpected witness statement. In addition, they did not have the authority, status, or confidence that a police officer or detective would have, and even though they had learned several techniques, there were other techniques that they did not know and did not use. With more experience, confidence, and authority, influence effects might have been larger than those observed.

We must be cautious in our remarks regarding actual police behavior. Although there is much written about how police *should* conduct eyewitness identification procedures, there is much less written about how police actually do conduct eyewitness identification procedures. We do not know how often police conduct suggestive procedures like those used the present study. More importantly, we do not know the conditions that influence the police to engage in behavior that influences witnesses. These questions remain for future research.

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