



# Secondary Confessions as Post-identification Feedback: How Jailhouse Informant Testimony Can Alter Eyewitnesses' Identification Decisions

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## Abstract

Prior research has shown that primary confession evidence can alter eyewitnesses' identifications and self-reported confidence. The present study investigated whether secondary confession evidence from a jailhouse informant could have the same effect. Participants ( $N = 368$ ) watched a video of an armed robbery and made an identification decision from a photo lineup. Except for those in the no-feedback conditions, all participants then read that certain lineup members either confessed to the crime, denied involvement, or were implicated by a jailhouse informant. Jailhouse informant testimony implicating the identified lineup member led participants to have significantly higher confidence in their identification. In contrast, jailhouse informant testimony that implicated a lineup member other than the identified led participants to have significantly lower confidence in their initial identification, and 80% of these witnesses changed their identification. These results indicate that jailhouse informant testimony can influence eyewitnesses' confidence and their identification decisions.

**Keywords** Jailhouse informant · Secondary confession · Eyewitness identification · Eyewitness confidence · Primary confession

The evidentiary power of two very different forms of confession has been investigated over the past 20 or so years (Kassin and Neumann 1997; Kassin and Sukel 1997; Neuschatz et al. 2008; Wetmore et al. 2014). The most common form, a primary confession, is a direct admission of guilt given by a suspect,

whereas a secondary confession is a statement made by one individual about someone else's admission of guilt (Wetmore et al. 2014). A common source of secondary confessions is jailhouse informants. A jailhouse informant is an individual who claims to have heard a fellow inmate confess to a crime while the two were incarcerated together. Secondary confessions from informants and primary confessions are similarly persuasive to potential jurors; both are more persuasive than other forms of evidence (including eyewitnesses) (Kassin and Neumann 1997; Wetmore et al. 2014). Giving further support to the evidentiary power confessions have, approximately 40% of all wrongful convictions later overturned by DNA evidence involved a false primary or secondary confession (Innocence Project 2017), and false secondary confessions from jailhouse informants are the leading cause of wrongful capital convictions (Warden 2004). Considering the persuasiveness these confessions have, researchers have begun to investigate whether they are powerful enough to contaminate other forms of evidence (Erickson et al. 2016; Hasel and Kassin 2009; Kassin et al. 2012).

Kassin et al. (2012) reviewed 241 DNA exoneration cases from the Innocence Project and found that cases involving a false primary confession had significantly higher frequencies of additional false evidence than did cases involving an eyewitness. Additionally, in the cases involving multiple pieces of false evidence, primary confessions were most likely to have

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occurred first. These findings suggest that false primary confessions may lead to other false evidence, and indeed, experimental findings support this hypothesis. For example, researchers have found that primary confession evidence can alter assessments from professional polygraph examiners (Elaad et al. 1994) and participant-handwriting evaluators (Kukucka and Kassin 2014). Researchers have also found that false primary confession evidence can lead alibi witnesses to recant the testimony they previously gave in support of the confessor's innocence (Marion et al. 2016).

Most pertinent to the current study, Hasel and Kassin (2009) found that eyewitnesses are not immune to this contaminating effect of confessions. Hasel and Kassin (2009) investigated whether or not a primary confession could persuade eyewitnesses to change their identification. In their study, participants witnessed a live mock crime in which a laptop was stolen. Participants were then presented with a photo lineup that did not include the thief (target-absent) and were asked to identify the perpetrator and give a confidence rating for their identification decision. Two days later, participants returned to the laboratory and were told that the experimenter had reviewed all the eyewitness accounts and had interrogated a list of predetermined suspects. Among choosers (those who identified one of the members of the lineup), the experimenter told some of the participants that the individual they identified confessed during the interrogation; others were told that a particular suspect confessed, but it was not the individual they had identified. Participants were then given the chance to change their previous identification. The researchers found that the participants who were told the person they identified confessed had significantly increased confidence in their identification, whereas those who were told that another suspect confessed had a significant decrease in confidence. Most importantly, when participants were given the chance to reconsider their identification, 60% of those who were told another suspect confessed changed their identification to identify the confessor. Clearly, these findings illustrate that confessions can influence other forms of evidence.

Like primary confessions, secondary confessions have been found to influence eyewitnesses. Erickson et al. (2016) used an experimental paradigm similar to that of Hasel and Kassin (2009), in which participants witnessed a confederate steal a laptop and then were asked to make an identification from a target-absent photo lineup. Participants who were later told that an accomplice implicated an unidentified individual had significantly lower confidence and scored significantly lower on retrospective memory reports than did participants who were told the identified individual confessed. Consistent with the primary confession evidence in the study by Hasel and Kassin (2009), the secondary confession evidence in the study by Erickson et al. (2016) altered eyewitness testimony.

Although Erickson et al. (2016) demonstrated that secondary confession evidence can significantly influence

eyewitnesses' confidence, questions remain unresolved with respect to the contaminating effect of secondary confessions on eyewitness identification. First, although the study investigated changes in confidence, it did not give participants the chance to reconsider their identification decisions; therefore, it is unknown whether secondary confessions, like primary confessions, can lead eyewitnesses to change their identifications. Second, Erickson et al. (2016) used an accomplice as their source of secondary confession, so the influence of jailhouse informant evidence—the most controversial form of secondary confessions (Natapoff 2009)—on eyewitness decisions is still unknown. The aim of the current study was to investigate these two questions.

## Post-identification Feedback

It is possible that confession evidence may operate as a form of post-identification feedback. Post-identification feedback is any information given to an eyewitness about their identification decisions after the fact (Charman et al. 2010). Post-identification feedback has been studied extensively and has been found to influence eyewitness confidence, among other eyewitness judgments (for a review, see Steblay et al. 2014). Confirming feedback suggests that the eyewitness made an accurate identification, whereas disconfirming feedback suggests that the eyewitness made an inaccurate identification. The influence that confirming and disconfirming feedback has on eyewitnesses can be understood through the Selective Cue Integration Framework (Charman et al. 2010).

The Selective Cue Integration Framework proposes that eyewitness confidence assessment occurs in a three-stage process. First, the assessment stage is when eyewitnesses initially begin to assess their confidence by considering the strength of their internal cues. An example of an internal cue could be the mental representation of a culprit's face. If the representation of the culprit's face is vivid and easily accessible, the model theorizes that the eyewitness will express high confidence immediately. However, if the mental representation of the culprit is not vivid or easily accessible, the eyewitness will move on to the next stage. During the second stage, the search stage, the eyewitness searches for external cues to determine the accuracy of his or her decision. Post-identification feedback is one type of external cue. Once the eyewitness has completed the search for relevant external cues, he or she moves on to the last stage, evaluation. During the evaluation stage, the eyewitness looks for information that would undermine the credibility of the external cues gathered during the search stage. If this type of information is found, the external cues are not considered when assessing confidence. However, if no information is found undermining the credibility of the external cues then the external cues are used when assessing confidence. Based on this explanation, eyewitnesses who have a weak memory of the crime will use external cues, including

feedback, to assess their confidence, if the source of feedback is believed to be credible (Charman et al. 2010). Learning about a confession, primary or secondary, may act as an external cue to accuracy for an eyewitness, which can influence their subsequent confidence.

Based on previous research suggesting that primary and secondary confessions are similarly influential (Wetmore et al. 2014) and that primary confessions can lead eyewitnesses to alter their identification decisions (Hasel and Kassin 2009), it was hypothesized that both disconfirming jailhouse informant evidence and disconfirming primary confession evidence would increase the rate of identification changes, whereas confirming jailhouse informant evidence and confirming primary confession evidence would not. Consistent with previous research suggesting primary confessions and secondary confessions may act as post-identification feedback (Erickson et al. 2016; Hasel and Kassin 2009) and based on the Selective Cue Integration Framework (Charman et al. 2010), it was also hypothesized that the confirming confession and jailhouse informant evidence would increase confidence, whereas the disconfirming confession and jailhouse informant evidence would decrease confidence. To be clear, the feedback did not come from lineup administrators, as is typical; instead, the feedback about identification accuracy came in the form of a confession indicating that the participant either did or did not identify the person who confessed.

## Method

### Participants

This experiment included ( $N = 420$ ) undergraduate psychology students from a southern university, who received course

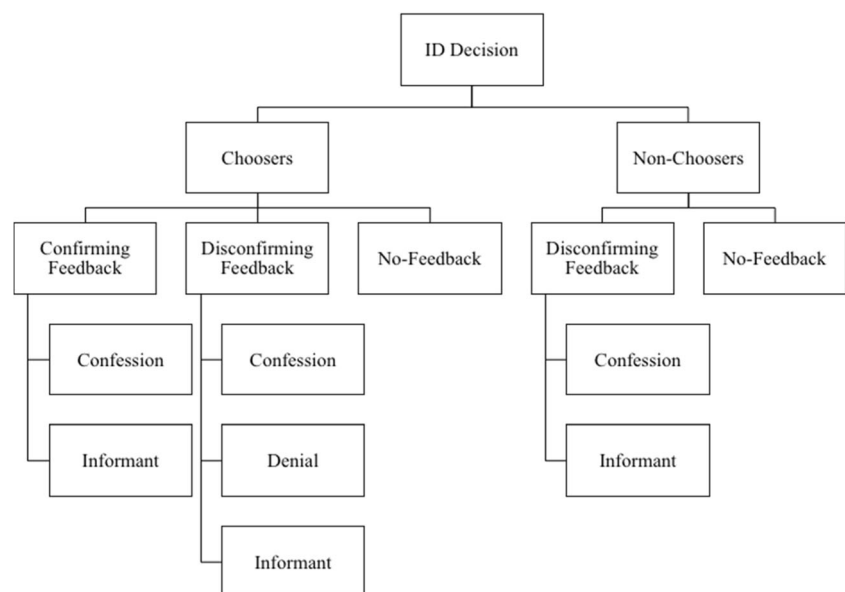
credit in exchange for participation. The data from 52 participants (12.4%) were excluded from analysis for failure to answer the manipulation check questions accurately ( $n = 50$ ) or for indicating suspicion about the experimental paradigm ( $n = 2$ ). After exclusion,  $N = 368$  participants remained ( $M$  Age = 20.52,  $SD = 4.39$ ; 62.7% female), of whom 71.6% identified as Caucasian/White, 16.1% African American, 4% Asian, 3.8% Hispanic, .8% American Indian, .8% Native Hawaiian or Pacific Islander, and 1.6% Other.

### Design

The design differed for those who made an initial identification (choosers) versus those who declined to make an initial identification (non-choosers) (see Fig. 1 for an illustration of the design, which mirrors that of Hasel and Kassin 2009). For choosers, a six-group (feedback: confirming confession, disconfirming confession, confirming informant, disconfirming informant, disconfirming denial, no-feedback) between-subjects design was implemented. For non-choosers, a three-group (feedback: confession, informant, no-feedback) between-subjects design was implemented. To be clear, “confession” indicates a primary confession, whereas “informant” indicates a secondary confession provided by a jailhouse informant.

In the no-feedback conditions, participants were given no information about the accuracy of their identification decisions. In the disconfirming conditions, participants were told that although the individual implicated by either himself or the informant was in the lineup, the participants had not identified that person. In other words, choosers were told that an unspecified alternate person from the lineup was implicated in the crime, whereas non-choosers were simply told that an unspecified person from the lineup was implicated.

Fig. 1 Study design



Choosers could also receive disconfirming denial, confirming confession feedback, or confirming informant feedback. In the confirming conditions, the participants were told that they had identified the person that confessed or had been implicated by the jailhouse informant. For example, if the participant selected photo #5, then they were told that this was indeed the person that confessed to the police or allegedly to the jailhouse informant. Only choosers received confirming feedback about their identifications; non-choosers, having not made an initial identification decision, could not be told that their identification was of the implicated individual. Finally, in the disconfirming denial condition, choosers read that they had identified the individual from the police interview but that he denied committing the crime.

The primary dependent variables of interest were identification changes and self-reported confidence ratings. For choosers, an identification change occurred when a participant identified a different lineup member at the second presentation of the lineup than the one they initially identified. For non-choosers, an identification change occurred when a participant identified a lineup member at the second presentation of the lineup after no identification was made at the first lineup presentation.

## Materials

The materials in this study were adapted from a real criminal investigation involving an armed robbery of a convenience store. Materials included a surveillance video of the crime itself, a simultaneous photo lineup constructed by the police department during the investigation, and a police report divided into four sections. The first three sections of the police report described what the police did at the crime scene. The fourth section of the police report stated that a police interview later occurred. In the no-feedback conditions, this section of the police report gave no information about what happened during the interview. In all other conditions, this section stated that a man either confessed to committing the crime (confession conditions), denied committing the crime (disconfirming denial condition), or claimed to have previously heard a fellow individual in the police holding area confess to the crime (informant conditions).

**Surveillance Video** The surveillance video was the actual video retrieved from the convenience store where the robbery occurred. The video was 2 min long and showed an overhead view of the checkout counter. In the video, a white male wearing a baseball hat approached the counter with a six-pack of beer, and after a brief interaction with the clerk, pulled out a small handgun, and pointed it at the cashier. The cashier opened the cash register and put the money, beer, and four packs of cigarettes into a bag and handed the bag to the man. The perpetrator then exited the store. A partial view of

the perpetrator's face (i.e., his chin, mouth, and right cheek) is visible throughout the video, but his entire face is visible for only 1.5 s. There was no audio in the surveillance video.

**Photo Lineup** The photo lineup was constructed by the Germantown Police Department during the investigation. The photo lineup was suspect-present<sup>1</sup> and included six members who were presented simultaneously. All members of the lineup matched the physical description of the culprit given by the cashier (i.e., white male, reddish brown hair, short beard). In the study, two versions of the lineup were used: the original version the police used in which the suspect is in position 5, and an edited version in which the suspect was swapped with the photograph in position 3. This change was made for counterbalancing purposes. There were no other differences between the original and edited version.

## Procedure

Participants were informed that they would be participating in a decision-making study in which they would view information from a real criminal case and would be asked to make judgments about that information. The entire experiment took place on computers using E-Prime 2.0 software (Psychology Software Tools 2012). After giving informed consent, participants were instructed to read all material and to pay close attention. Participants read the first police report that provided the time, date, and location of the convenience store robbery and the clerk's testimony. Next, the surveillance video of the robbery was played.

Following the video, participants read the second section of the police report, written from the perspective of Officer P., that explained how the police arrived on the scene, checked the nearby area for the perpetrator, received a statement from the clerk, processed the area for fingerprints, and obtained the surveillance recordings from the store. This second report acted as a distractor task and was read for 3 min.

Next, unbiased lineup instructions were given that stated, "you will be presented with a photographic lineup. The perpetrator of the crime may or may not be present. If you believe the perpetrator is present, press the number (1–6) that corresponds to his photo. If you do not believe the perpetrator is present, press 0." After, one of the two versions of the photo lineup was presented based on random assignment (i.e., suspect in position 5 or position 3), and participants made an identification decision. After completing the identification task, both choosers and non-choosers rated their confidence

<sup>1</sup> We are unable to know if the suspect, who was later convicted, was the perpetrator of the crime; therefore we do not have a traditional target-present lineup and cannot speak to perpetrator identifications, but only identifications of the suspect.



in their identification on a seven-point Likert scale (1 = “not at all confident” to 7 = “very confident”).

The third section of the police report reiterated the information from the second police report, but was written from the perspective of a different officer, Officer C. Participants read this section of the report and then they read that the police began interviewing residents in the area in hopes of obtaining more information about the crime. The text went on to explain that one of these individuals, named Kenneth C., was brought into the police station, put into a holding area, and then interviewed by the police.

At this point, participants were randomly assigned to a feedback condition and then they read the fourth section of the police report that corresponded to that condition. The fourth section was written from the perspective of a final officer, Officer G., whose report contained the information about what occurred during the interview. After, participants received the feedback (i.e., confirming, disconfirming or none) that also corresponded to their assigned condition. All versions of the fourth section of the police report and all types of feedback are discussed in the Design and Materials section.

After receiving the feedback, all participants were again asked to rate their confidence in their first identification decision. After, they were presented with lineup instructions that stated, “you will now be presented with the same photographic lineup that you previously saw. You can choose to change your identification decision or to make the same decision again if you believe you made the correct decision the first time.” Next, the same lineup they previously saw was presented and they made their second identification decision. After making their decision, all participants rated their confidence in that decision (regardless of whether they changed their decision or not).

Lastly, manipulation checks were presented, asking participants (1) if they identified someone in the first lineup, (2) if they identified someone in the second lineup, and (3) what occurred during the police interview. After answering the manipulation checks, participants answered a demand characteristic question asking if they felt the researcher had led them to respond in a certain way during the study. The study ended with a demographic questionnaire and debriefing.

## Results

In order to evaluate our hypotheses, it was necessary first to ensure that participants read the material. Participants’ data were removed from the analyses if they incorrectly answered both the first and second manipulation check and/or if they incorrectly answered the third manipulation check ( $n = 50$ ). In addition, participants’ data were removed if they responded to the demand characteristic

question by stating that they believed the researcher wished them to change their identification decisions ( $n = 2$ ). After removal, there were 368 participants remaining for analysis.

### Identification Decisions as a Dependent Measure

Suspect position in the lineup did not affect the rate of identification change,  $\chi^2(1, N = 368) = .33, p = .57$ , choosing rate,  $\chi^2(1, N = 368) = .05, p = .83$ , or the rate of suspect identifications,  $\chi^2(1, N = 368) = .13, p = .72$ . Thus, the remainder of the analyses collapse over suspect position. One hundred and fifty-five participants (42.12%) identified one of the members of the first lineup (choosers), whereas 213 participants (57.88%) made no identification (non-choosers). The number of choosers who chose the actual suspect in lineups 1 and 2 were 50 (32%) and 43 (28%). With regard to non-choosers, by definition they did not make a positive identification in lineup 1; however, 25 (12%) made an identification of the suspect in lineup 2. The following analyses treat choosers and non-choosers separately.

**Choosers’ Identification Changes** The data from 148 of the 155 choosers were used for the identification change analyses.<sup>2</sup> As can be seen in Table 1, the highest rate of identification changes occurred in the disconfirming informant and confession conditions. Eighty percent of those in the disconfirming informant condition changed their identification, while 62% of those in the disconfirming confession condition changed theirs. As predicted, the rate of identification changes was significantly influenced by type of feedback,  $\chi^2(5, N = 148) = 51.82, p < .001, V = .59$ . Planned pairwise comparisons revealed that the rate of identification changes in the disconfirming informant and confession conditions were significantly higher than the rate in the no-feedback condition,  $\chi^2(1, N = 45) > 9.75, p < .002, V > .47$ . Those in the disconfirming informant and confession conditions were 20 times and 8 times more likely, respectively, to change their identification than those in the no-feedback condition. The rate of identification change in these two disconfirming conditions did not differ,  $\chi^2(1, N = 46) = 1.84, p = .18$ .

It might be the case that participants who made suspect identifications at lineup 1 were less influenced by the feedback. To test this possibility, a chi-square test was conducted on identification type (i.e., suspect identification vs. non-suspect identification) at lineup 1 and the rate of identification changes. This analysis was not significant,  $\chi^2(1, N = 148) =$

<sup>2</sup> There were seven choosers who made an initial identification and then rejected the lineup at the second presentation. Because we were specifically interested in identification changes in which a new lineup member is identified, these participants’ data were removed from the identification change analyses, as they neither identified a new member nor maintained a stable identification.

**Table 1** Proportion of identification changes per condition

Choosers	
Confirming confession	.04 <sub>a</sub>
Confirming informant	.13 <sub>a</sub>
Disconfirming confession	.62 <sub>bc</sub>
Disconfirming denial	.27 <sub>ac</sub>
Disconfirming informant	.80 <sub>b</sub>
No-feedback	.17 <sub>a</sub>
Non-choosers	
Confession	.67 <sub>a</sub>
Informant	.52 <sub>ab</sub>
No-feedback	.38 <sub>b</sub>

Note: proportions not sharing a common subscript within chooser conditions and non-chooser conditions differ at  $p \leq .01$

2.35,  $p = .13$ , indicating that, collapsed across feedback conditions, participants who initially identified the suspect were as likely to change their identification as those who did not.

In addition to investigating the influence of feedback, we also investigated the influence of initial confidence on choosers' identification changes. A binomial logistic regression was performed on choosers' data to determine if initial confidence predicted whether or not participants would change their identifications. The model was not statistically significant,  $\chi^2(1, N = 148) = 1.64, p = .20$ , indicating that initial confidence was not predictive of choosers' identification changes.

**Non-choosers' Identification Changes** As can be seen in Table 1, among initial non-choosers, 51.5% of those in the informant condition identified one of the members of the second lineup, compared to 66.7% in the confession condition and 38.1% in the no-feedback condition. Once again, there was a significant effect of feedback on identification change,  $\chi^2(2, N = 213) = 11.97, p = .003, V = .237$ . The rate of identification changes in the confession condition was significantly higher than the rate in the no-feedback condition,  $\chi^2(1, N = 147) = 11.85, p = .001, V = .28$ , but did not differ significantly from the informant condition,  $\chi^2(1, N = 150) = 3.54, p = .06$ . The rate of identification changes in the jailhouse informant condition, although in the predicted direction, did not differ significantly from the rate in the no-feedback condition,  $\chi^2(1, N = 129) = 2.35, p = .13$ . Those in the informant condition were 1.73 times more likely to change their identification than those in the no-feedback condition, whereas those in the confession condition were 3.25 times more likely to make a change.

As was done for choosers, a binomial logistic regression was performed on non-choosers' data to determine if their initial confidence predicted whether or not they would make an identification at the second lineup presentation. Unlike the

model for choosers, the non-choosers' model was statistically significant,  $\chi^2(1, N = 213) = 11.84, p = .001$ , with the logistic regression coefficient for initial confidence ( $B$ ) equaling  $-.36, p = .001$  and with an odds ratio of .699 (inverted odds ratio = 1.43). This indicates a negative relationship between initial confidence and identification change, such that the odds of making an identification change (i.e., identifying a lineup member at the second lineup presentation) were 1.43 times higher for each decrement in confidence. In other words, non-choosers who had low confidence in their initial rejection of the lineup were more likely to identify someone at the next presentation of the lineup.

### Confidence as a Dependent Measure

All participants provided three confidence judgments: immediately after their initial identification, after receiving feedback, and then after their second identification decision. We analyzed confidence for choosers and non-choosers separately. The means and standard deviations for all confidence ratings are in Table 2, Figs. 2 (choosers) and 3 (non-choosers).

**Choosers** To test the hypotheses that confirming feedback would increase confidence and disconfirming feedback would decrease confidence, a 6 (Feedback)  $\times$  3 (Time) two-way mixed analysis of variance (ANOVA) was conducted on the mean confidence ratings, with Time a within-subject variable. This analysis revealed significant main effects of Time,  $F(2, 298) = 4.51, p = .012, \eta_p^2 = .03$ , and Feedback,  $F(5, 149) = 5.06, p < .001, \eta_p^2 = .15$ . Most importantly, there was a significant interaction between Time and Feedback,  $F(10, 298) = 7.70, p < .001, \eta_p^2 = .21$ .

To explore this interaction further, multivariate ANOVAs (MANOVAs) were conducted on the mean confidence ratings for each feedback condition, and Bonferroni's adjustment was used to control for the multiple pairwise comparisons. These analyses revealed a significant change in confidence over time for the confirming informant condition,  $F(2, 148) = 7.79, p = .001, \eta_p^2 = .1$ , the confirming confession condition,  $F(2, 148) = 15.01, p < .001, \eta_p^2 = .17$ , and the disconfirming informant condition,  $F(2, 148) = 15.48, p < .001, \eta_p^2 = .17$ . As hypothesized, there was a significant increase in confidence after receiving feedback in both the confirming informant condition ( $M$  difference =  $-.73, SE = .20, p = .001$ ) and the confirming confession condition ( $M$  difference =  $-1.19, SE = .22, p < .001$ ).<sup>3</sup> In contrast, and as hypothesized, there was a significant decrease in confidence after receiving feedback in the

<sup>3</sup> In the confirming confession, condition was there was also a significant decrease in confidence after the second identification decision was made ( $M$  difference =  $.67, SE = .21, p = .005$ ). However, this third confidence rating was still significantly higher than the first rating that was given before receiving feedback ( $M$  difference =  $-.52, SE = .2, p = .03$ ).

**Table 2** Means (standard deviations) of confidence ratings per condition

Condition	Confidence		
	Time 1	Time 2	Time 3
<b>Choosers</b>			
Confirming confession	4.15 (1.32) <sub>a</sub>	5.33 (.96) <sub>b</sub>	4.67 (1.41) <sub>c</sub>
Confirming informant	3.76 (1.06) <sub>a</sub>	4.48 (1.35) <sub>b</sub>	4.30 (1.10) <sub>b</sub>
Disconfirming confession	3.77 (1.15) <sub>a</sub>	3.5 (1.26) <sub>a</sub>	3.82 (.91) <sub>a</sub>
Disconfirming denial	3.96 (1.07) <sub>a</sub>	4.22 (1.13) <sub>a</sub>	4.22 (1.17) <sub>a</sub>
Disconfirming informant	3.72 (1.37) <sub>a</sub>	2.64 (1.25) <sub>b</sub>	3.72 (1.10) <sub>a</sub>
No-feedback	4.00 (1.32) <sub>a</sub>	4.00 (1.32) <sub>a</sub>	4.20 (1.35) <sub>a</sub>
<b>Non-choosers</b>			
Confession	4.37 (1.32) <sub>a</sub>	3.29 (2.0) <sub>b</sub>	4.25 (1.34) <sub>a</sub>
Informant	4.30 (1.41) <sub>a</sub>	3.47 (1.69) <sub>b</sub>	4.18 (1.36) <sub>a</sub>
No-feedback	4.34 (1.48) <sub>a</sub>	4.37 (1.5) <sub>a</sub>	4.32 (1.27) <sub>a</sub>

Note: values not sharing a common subscript within row differ at  $p \leq .05$

disconfirming informant condition ( $M$  difference = 1.08,  $SE = .22$ ,  $p < .001$ ). Additionally, there was a significant increase in confidence in the disconfirming informant condition after the second ID was made ( $M$  difference =  $-1.08$ ,  $SE = .22$ ,  $p < .001$ ). Unlike the disconfirming informant condition, no significant difference in confidence was found across time for the disconfirming confession condition,  $F(2, 148) = 1.06$ ,  $p = .35$ . Lastly, no significant change in confidence was found in the no-feedback condition,  $F(2, 148) = .63$ ,  $p = .54$ , or the disconfirming denial condition,  $F(2, 148) = .90$ ,  $p = .41$ .

**Non-choosers** Similar to the analysis for choosers, a 3 (Feedback)  $\times$  3 (Time) two-way mixed ANOVA was conducted on the mean confidence ratings for non-choosers.<sup>4</sup> The analysis revealed a significant main effect of Time,  $F(1.70, 357.92) = 27.11$ ,  $p < .001$ ,  $\eta_p^2 = .11$ , and a significant interaction between Time and Feedback,  $F(3.41, 357.92) = 7.32$ ,  $p < .001$ ,  $\eta_p^2 = .07$ .

Consistent with the choosers' data, MANOVAs were conducted on the mean confidence ratings for each non-chooser's feedback condition, and Bonferroni adjustments were used to control for the multiple pairwise comparisons. The analyses revealed a significant change in confidence for the informant condition,  $F(2, 209) = 13.61$ ,  $p < .001$ ,  $\eta_p^2 = .12$ , and the confession condition,  $F(2, 209) = 29.22$ ,  $p < .001$ ,  $\eta_p^2 = .22$ . As hypothesized, there was a significant decrease in confidence after receiving feedback in both the informant condition ( $M$  difference =  $.83$ ,  $SE = .16$ ,  $p < .001$ ) and the confession condition ( $M$  difference = 1.08,  $SE = .14$ ,  $p < .001$ ). Additionally, a significant increase in confidence was found after the second identification decision was made in both of these conditions

<sup>4</sup> For this analysis, the assumption of sphericity was violated, and therefore the Greenhouse-Geisser correction was used.

(respectively,  $M$  difference =  $-.71$ ,  $SE = .20$ ,  $p = .001$  and  $M$  difference =  $-.96$ ,  $SE = .18$ ,  $p < .001$ ). In contrast, there was no significant difference in confidence across time for the no-feedback condition,  $F(1.32, 81.55) = .13$ ,  $p = .79$ .

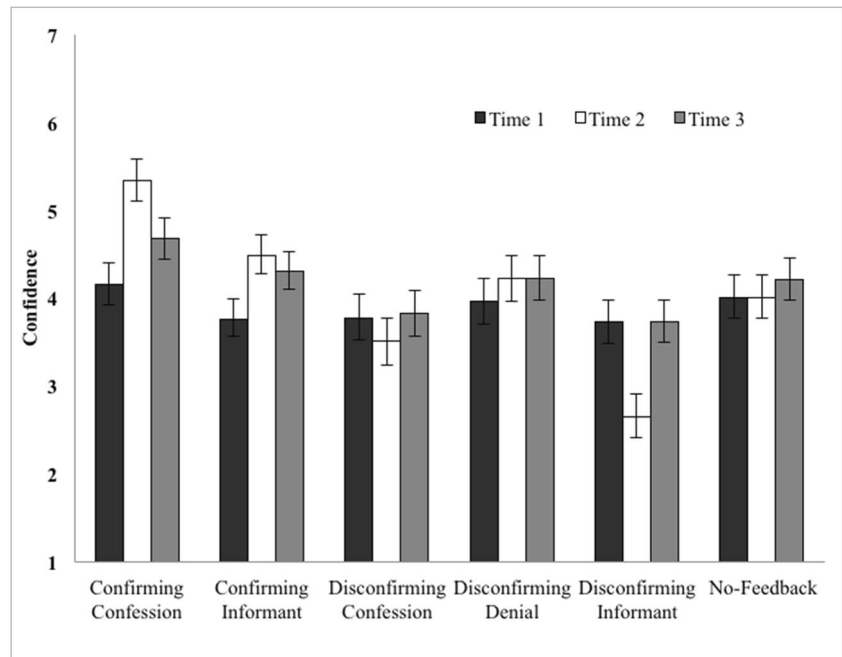
## Discussion

The primary goal of the current study was to investigate whether secondary confessions could contaminate eyewitness identifications, similar to primary confessions, and the results indicate that they can. We found that primary confessions alter identifications consistent with Hasel and Kassin (2009), and we extended the research by showing that secondary confessions, provided by jailhouse informants, can have the same effect. Among choosers, 80% of participants who received disconfirming jailhouse informant evidence went on to identify a different lineup member. In other words, these participants were 20 times more likely to change their identification than were participants in the no-feedback condition. Likewise, those who received disconfirming primary confession evidence identified a different lineup member 62% of the time, and were eight times more likely to change their identification than those in the no-feedback group. Among non-choosers, a parallel effect was found. The jailhouse informant evidence implicating an unspecified lineup member led 52% of participants to make an identification, and the primary confession evidence implicating an unspecified lineup member led 67% of participants to make an identification.

Another goal of the current study was to test whether confessions would alter eyewitnesses' self-reported confidence. Among choosers, both confirming jailhouse informant evidence and confirming primary confession evidence significantly increased participants' confidence in their initial identifications. In contrast, disconfirming jailhouse informant evidence significantly decreased participants' confidence in their initial identification and led to a significant increase in confidence after the second identification was made when 80% identified a different individual. Thus, eyewitnesses had higher confidence that they identified the perpetrator when external cues in the form of evidence (i.e., the primary or secondary confession) supported their identification decision.

In addition to replicating and extending previous research on the ability of confessions to influence eyewitnesses (Erickson et al. 2016; Hasel and Kassin 2009), the present findings relate to the broader post-identification feedback literature. In standard post-identification feedback studies, participant-eyewitnesses are presented with direct confirming or disconfirming feedback in regard to their identification, and then changes in confidence and other self-reported eyewitness variables are assessed (Stebly et al. 2014). Here, the feedback did not pertain directly to the eyewitness's identification (e.g., "Good, you identified the suspect") but did so indirectly, by

**Fig. 2** Choosers' confidence levels before receiving feedback (Time 1), after receiving feedback (Time 2), and after the second lineup decision (Time 3)

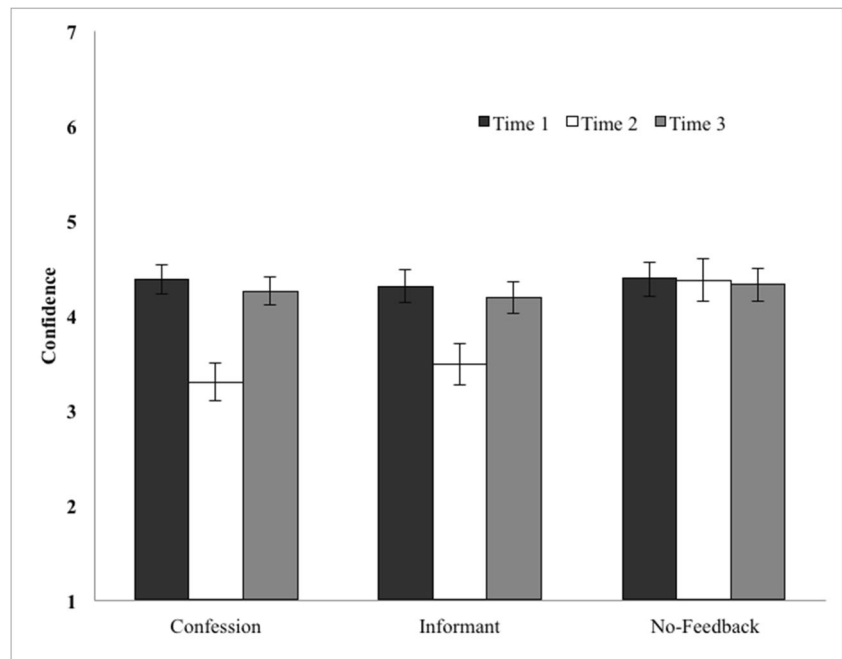


providing additional information about the investigation that had implications for the accuracy of the initial identification. This indirect feedback in the form of both disconfirming and confirming jailhouse informant testimony influenced confidence in the predicted directions, therefore acting as influential post-identification feedback. This finding suggests that external cues in the form of indirect feedback are influential in the same way that previously researched direct feedback is.

Additionally, the current study extended post-identification feedback research by demonstrating behavioral

changes. Unlike prior research that has shown confidence and other self-reports can change as a function of feedback, our study took it a step further by manipulating eyewitnesses' identification behavior. These behavioral changes have important implications for the legal system. Our findings provide evidence that lineup administrators can inadvertently give feedback that not only manipulates an eyewitness's self-reports, but can also lead them to change their identifications. Other non-intentional sources of feedback, like the witness seeing news reports about the crime or seeing the

**Fig. 3** Non-choosers' confidence levels before receiving feedback (Time 1), after receiving feedback (Time 2), and after the second lineup decision (Time 3)





defendant at trial, may have a similar effect. Depending on whether the identification change is discoverable in court, the inflated confidence that eyewitnesses express after the second identification attempt could influence jurors' decisions. Prior research shows that confident witnesses are more believable to jurors (Cutler et al. 1988; Wells et al. 1981; Wells et al. 1979), and thus the influence that informant testimony can have on witnesses may increase conviction rates. On the other hand, research shows that when eyewitnesses are not consistent in their reports of confidence and this inconsistency is explicitly challenged by the defense attorneys, guilt ratings plummet (Bradfield and McQuiston 2004). Therefore, defense attorneys could use identification changes to lower jurors' perceptions of witness credibility and decrease conviction rates.

Among non-choosers, one finding that was unrelated to our hypotheses but still deserves mention is the rate of identifications in the no-feedback condition. Thirty-eight percent of non-choosers who did not receive any feedback went on to identify a lineup member. This proportion was higher than expected but was likely due to a compound of two things. First, simply presenting a lineup a second time has been shown to significantly decrease non-identifications (Horry et al. 2015; Steblay et al. 2011). Secondly, although those in the no-feedback conditions in the current study did not read any information they could link to any member of the lineup, they did read about a specific individual being brought to the police station and interviewed by police, and shortly after, they were presented with the lineup again. Some of these participants may have found this information to be an indication of the perpetrator's presence in the lineup. If this is the case, it would likely lead some non-choosers to make an identification as previous research on pre-admonition suggestions has shown that feedback suggesting the presence of the perpetrator significantly increases eyewitnesses' choosing rates (Quinlivan et al. 2012; Quinlivan et al. 2016).

### Future Research and Limitations

One of the main limitations of the current study was our inability to know whether the suspect was guilty or innocent. Because of this inability, we do not know if the results are generalizable to eyewitnesses who accurately identify a guilty suspect, as we do not know if the suspect in our lineup was the actual perpetrator of the crime. Another issue of generalizability deals with the memory strength of eyewitnesses. Based on the Selective Cue Integration Framework (Charman et al. 2010), eyewitnesses who have strong internal cues will not be influenced by external feedback like the jailhouse informant testimony used in this study. Therefore, one should be hesitant to generalize the findings to eyewitnesses who may have stronger internal cues than our participant-eyewitnesses. Future research could investigate the boundary conditions of

the current findings, for example, by manipulating exposure time and retention interval to assess at what levels the current findings can and cannot be replicated.

Although it is clear from this research that some eyewitnesses will change their identifications based on a secondary confession, it is still an open question of how these witnesses will be perceived by jurors. Are eyewitnesses who have changed their identifications but are more confident as a result of secondary confession evidence perceived as more or less credible by jurors? It may be the case that eyewitnesses will be more believable, to the extent that jailhouse informants support the identifications they make. If jurors use eyewitness confidence as the key indicator of believability, this would result in higher believability when eyewitnesses have changed their identifications but are confident. This would be consistent with Garrett's (2011) analysis of jailhouse informants in which he concluded that informants help bolster other evidence. On the other hand, if consistency is the key indicator of eyewitness believability, jurors might perceive witnesses who change their identifications as being less credible. Future research could examine this issue by presenting mock jurors with a trial transcript in which the eyewitness has changed their identification decision but expresses high confidence and is supported by other types of evidence (e.g., confessions).

Another question for future research regards the credibility of jailhouse informants. Future research should investigate what aspects of jailhouse informant testimony influence its perceived credibility, and some of this research has already been done (Key et al., *in press*; Maeder and Yamamoto 2017). Some of these potential variables could be the amount of corroborating details contained in an informant's testimony, the method used by the informant to obtain relevant crime details (i.e., from the suspect or from another source), or the extent to which the jailhouse informant is cross-examined. This line of research is important to help us gain a better understanding as to why this type of testimony is powerful evidence.

### Implications

The results of the current study have important real-world implications. As mentioned earlier, jailhouse informants are responsible for an alarmingly high number of wrongful convictions (Innocence Project 2017; Natapoff 2009; Warden 2004). It is even more disconcerting that the majority of the informant testimony tends to occur in the most serious cases. Gross (2008) estimated that around 50% of all wrongful murder convictions were due to false jailhouse informant testimony. And the Northwestern University School of Law Center on Wrongful Convictions (2004) found that jailhouse informant testimony is the leading cause of wrongful conviction in capital cases. Garrett (2011) found 28 exoneration cases that involved

informant testimony, most (18) of which involved murder and rape and another 6 of which involved only murder.

Not only is this testimony sometimes unreliable, it has the power to influence other forms of evidence, as demonstrated in the current study. Garrett (2011) indicated that informant testimony was frequently used to bolster inculpatory evidence in particularly weak cases and to discredit exculpatory evidence. Given the danger that jailhouse informant testimony poses, safeguards need to be implemented. Most states do not require any special scrutiny of informants (see Garrett 2011). Some states, however, have already recognized the need for greater oversight of informant testimony. For example, California now requires pre-trial admissibility hearings, and Connecticut has implemented judicial instructions specifically to address the reliability of informant testimony. Policymakers and police investigators should bear the current findings in mind when considering testimony from informants and when carrying out criminal investigations, to ensure that informant testimony does not corrupt eyewitnesses' identifications.

## Compliance with Ethical Standards

**Conflict of Interest** The authors declare that they have no conflict of interest.

**Ethical Approval** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

**Informed Consent** Informed consent was obtained from all individual participants included in the study.

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