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# The Effect of a "Don't Know" Option on Eyewitness Identification Accuracy in Lineups

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Running head: “Don’t Know” Option and Lineup Accuracy

# The Effect of a “Don’t Know” Option on Eyewitness Identification Accuracy in Lineups

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## Abstract

Given the importance of eyewitnesses in the criminal justice system, methods of reducing eyewitness identification errors have been an important area of research. In the present study, the effect of offering a witness a "don't know" option on identification accuracy was studied under conditions of better and poorer memory for the "perpetrator". Participants saw a series of male faces (half small in size and half large) and were later tested on their memory for these faces using six-person lineups that either included the studied face (target-present) or did not, but were made up of people who looked like one of the studied faces (target-absent). One group of participants was given the option of picking a lineup member or indicating "not present." A second group was given the additional option of saying "don't know." Participants' identification accuracy was higher for faces that had been seen in large format than faces which had been seen in small format. Most importantly, results indicated that the "don't know" option allowed participants to reduce false identifications in situations where memory for the original studied face was poor (small face at study), but did not significantly affect accuracy when memory was good (large face at study). More research is needed to determine the effect of the "don't know" option for other conditions of encoding and retrieval in order to determine whether it is a viable for use in law enforcement.

# The Effect of a "Don't Know" Option on Eyewitness Identification Accuracy in Lineups

In the United States, there have been 175 convictions overturned based on DNA evidence, and it is estimated that 75% of those cases involved mistaken eyewitness identifications (Scheck, Neufeld, & Dwyer, 2001). Further, many of these wrongly convicted men served long prison terms before being exonerated. The importance of understanding eyewitness identification has led psychologists for over 20 years to research factors affecting eyewitness accuracy, particular focusing on variables under control of the criminal justice system. The application of such studies is important given the weight juries give to eyewitness identifications (Penrod, & Cutler, 1999) and the demonstrated errors that have occurred.

One factor that has been identified as potentially contributing to witness error is the procedures and instructions that are used to guide witnesses during the lineup process. For example, Steblay (1997) summarized research on the impact of biased instructions (e.g., not informing witnesses that the perpetrator may not be in the lineup) on witness accuracy using a meta-analysis. She concluded that biased instructions led to increased choosing in both target absent (TA – perpetrator is not in the lineup) and target present (TP – perpetrator is in the lineup) lineups. It was also concluded that biased instructions in target absent lineups reduced accuracy while in target present lineups it did not have a consistent impact on accuracy (this latter conclusion was disputed in a re-analysis by Clark, 2005). Such findings have influenced reform efforts. For example, the Justice Department commissioned a working group of experts from law enforcement, the legal system, and psychology to implement guidelines for eyewitness evidence. The resulting report "Eyewitness Evidence: A Guide for Law Enforcement" (National Institute of Justice, 1999) offered guidelines on conducting lineups. Line-up instruction

recommendations, in part, include instructing "the witness that it is just as important to clear innocent persons from suspicion as to identify guilty parties," and instructing "the witness that the person who committed the crime may or may not be in the set of photographs being presented." According to researchers, these would be relatively unbiased instructions.

It is important to note that the type of changes recommended are not the only ones which could be adopted. In fact, research on the topic has operationally defined instruction bias in different ways. According to Steblay (1997), *leading* instructions suggest that the suspect is present in the lineup, while *task-oriented* instructions stress the importance of identifying a suspect. *Pressure* instructions lack a "not present" option. However, even these definitions do not capture all the variety of ways researchers have studied the issue. One understudied aspect of lineup procedure concerns the availability of a "don't know" option. This particular option is of interest because there is considerable theoretical and empirical support in the general memory literature for the notion that providing a means for people to withhold a response is one way that they can strategically affect the accuracy of their memory judgments (e.g., Koriat & Goldsmith, 1994). In particular, a number of studies show that participants are able to use the presence of this option to increase the accuracy of their volunteered responses.

Although past eyewitness identification studies sometimes include a "not sure" or "don't know" response for witnesses (e.g., Tunnicliff & Clark, 2000), few studies have actually manipulated the presence or absence of such an option. Two studies that have are Warnick and Sanders (1980) and Köhnken and Maas (1988). In Warnick and Sanders (1980), participants witnessed a staged crime and received a lineup which included the perpetrator (TP). Participants who had a "don't know" option were better at identifying the perpetrator and less likely to identify a foil (a lineup member who was not the perpetrator) than control group

participants who did not have this option. In Köhnken and Maas (1988), participants view a staged crime and later received a lineup that did not contain the perpetrator (TA). In Experiment 1, participants had the option of a "don't know" response, but did not in Experiment 2. In both experiments, authors manipulated bias in the lineup instructions (e.g., "We believe that the person who committed the theft is in the lineup") and the effect of these instructions was smaller in Experiment 1 than Experiment 2. The authors concluded that having the "don't know" response allowed participants to overcome the negative effects of the biased instructions. Although both studies suggest a facilitative effect of including a "don't know" option, neither study is without its weaknesses. As noted by Clark (2005), the control group in Warnick & Sanders (1980) had some anomalous data, making it difficult to interpret group differences. Further, Kohnken & Maas (1988) compared performance across studies which had other procedural changes (e.g., the biased condition in Experiment 2 did not have an explicit "not present option, but did in Experiment 1). Finally, neither study directly compared performance in a target-present and a target-absent lineup.

The goal of the proposed study was to examine the effect of having a "don't know" option on eyewitness identification performance. According to prior research in the memory literature (Koriat & Goldsmith, 1994), having the ability to withhold a response should improve witness accuracy (fewer false identifications), but depending on the conditions, could also reduce accurate identifications. For example, in Experiment 1 of Koriat and Goldsmith's (1994) study, participants were given a general knowledge test in which they were rewarded for correct answers and penalized an equal amount for incorrect answers. While the quantity of correct answers did not differ significantly between the forced report (no don't know option) and free report (don't know option) conditions, the overall accuracy was significantly higher in the free

report condition. This suggests that the "don't know" option can help participants reduce their number of incorrect responses without significantly impacting their correct responses. Other experiments, however, have shown to "don't know" to have a negative impact on the quantity of correct responses (e.g. Experiment 4, Koriat & Goldsmith, 1994).

In order to have a more complete understanding of how this option affects witness identification accuracy, we adopted a procedure originated by Meissner, Tredoux, Parker and MacLin (2005). Traditional eyewitness research on lineups has primarily used a single witnessed event followed by either a target present or target absent lineup. Meissner et al (2005) introduced a lineup recognition paradigm in which multiple targets were witnessed and then tested by both a target present and target absent lineup. This paradigm has been used to test the effect of simultaneous vs. sequential lineups, perceptual distance, divided attention (Meissner et al, 2005), and the cross-race effect (Haw, Meissner, Marcon, & MacLin, 2006). The strength of this procedure is that it allows a more extensive evaluation of the identification decisions made by participants (because of the multiple lineups and the fact each person gets both target-present and target-absent lineups).

In the present study, participants saw a series of eight male faces. Each face was be accompanied by a crime descriptor word ("Robbery"). Half of the faces were presented as large photographs and half were presented as small photographs. This manipulation was intended to vary memory for the perpetrator, and is conceptually similar to seeing a perpetrator up close or farther away during the commission of a crime. After a delay (a filler task), participants viewed a series of 8 TP and 8 TA lineups. The availability of a "don't know" option was manipulated between-subjects. In one group, participants had the option of picking a lineup member or indicating the perpetrator is "not present." In the other group, participants also had

the option of saying "don't know. " These were called the Forced and Free report conditions, respectively, to be consistent with Koriat and Goldsmith (1994). It was predicted that participants in the Free Report condition would be more accurate (commit fewer false alarms) than those in the Forced Report condition. Because a "don't know" option allows participants to withhold a response, we were interested in whether false alarms (saying a perpetrator is present in a TA lineup) are reduced, but also whether hits (correctly identifying a perpetrator in a TP lineup) are reduced and by what degree. Based on data from Koriat & Goldsmith (1996), we also predicted that the "don't know" option would be more beneficial when participants' had better memory for the face (i.e., when they saw the large face at the time of study) than when their memory was poorer (when they saw the small face at the time of study).

## Method

### *Participants*

99 undergraduate students from Louisiana State University participated in the study and received extra credit in a psychology class. (Free Report, $n$=49; Forced Report, $n$ = 50)

### *Stimuli*

Faces from Meissner et al (2005) were used as study stimuli. The stimuli presented during the study phase were above-shoulder photographs of white males in casual clothing, smiling and standing in front of a gray background. The photograph was uniquely paired with a word describing the person's alleged crime (e.g., Robbery). At test, the line-up photographs consisted of above-shoulder views of white males in burgundy sweatshirts, not smiling and standing in front of a gray background. The lineups consisted of six faces presented simultaneously on the screen with no additional information from encoding (i.e., no crime descriptor word).

The fairness of the lineups used in this study was assessed by Meissner et. al (2005) by using a mock-witness paradigm (Malpass & Lindsay, 1999). In a mock-witness paradigm, participants identify a suspect in a line-up based only on a description of the suspect. Tredoux's E (Tredoux, 1998) is a measure of nominal lineup size, or the number of credible line-up distracters. Both measures determined the lineups to be unbiased. For a six-person lineup, chance selection of a target would be .166 and the number of credible distracters would be 5.The average proportion of mock witnesses selecting the target was .18 (95% CI = .15, .20) and the average E was 4.99 (95% CI = 4.80, 5.19).

*Design and Procedure*

A 2 x 2 mixed subjects design was used with report condition (Free Report vs. Forced Report) as a between-subjects variable and photograph size (Large vs. Small) (7.7 cm x 8.6 cm vs. 15.5 cm x 17 cm) as a within-subjects variable. Participants were randomly assigned to each condition.

Participants were tested in groups of 1 to 7. Upon arrival, each participant was seated in front of a computer, and told to remember the presented faces for a later memory test. Participants then viewed the photographs for 5 s per face and saw a unique crime descriptor word displayed before each photograph. A randomized order with a 2-sec interstimulus interval was used. A 5 min filler task immediately followed.

During the test phase, participants first heard the line-up instruction for their assigned condition. Instructions were repeated on the computer screen before each line-up. For each target face, both a six person target present and six person target absent simultaneous line-up were given. The order of faces within a line-up and order of line-ups were randomized for each participant (size). The size of the lineup photographs was approximately halfway between the

size of the large and small test photographs (10 cm x 10.6 cm). Participants in Forced Report condition were given the option of choosing one of the presented faces or indicating that a perpetrator was "not present." Participants in the Free Report condition were given the additional option of saying "don't know." Upon making a decision, participants were asked to rate their confidence. When a lineup member was selected from a lineup (regardless of whether it was a correct choice), participants were also asked to choose the crime the suspect was said to have committed out of a list of 10 crimes. The lures included other previously presented information (7 other crimes) and completely new information (2 crimes not listed). Participants also indicated whether they had initially seen the face in a small or large format at the time of study. The purpose of the crime words and size manipulation was to give participants contextual details which could be tested at study along with memory for the perpetrator. It was expected that participants who made correct identifications would recall correct details at levels above chance while participants who made false identifications would identify these details at chance levels. The crime words also served to add an element of realism and make each photograph an "individual crime scene."

## Results

A 2 X 2 mixed model ANOVA, with condition (free and forced report) as a between-subjects and, variable size of picture (small and large) as a within-subjects variable was used on the primary measures described below. The Forced Report participants had to pick a member of the lineup or indicate "not present." Free report participants had the same options and could also indicate "don't know." An alpha level of .05 was used for all analyses.

*Target-Present Lineups.* Target-present lineups (lineups in which a studied face ("perpetrator") is present) were analyzed in terms of response type: hits (correctly identifying the

perpetrator), misses (incorrectly indicating the perpetrator is not present), foil identifications (incorrectly choosing a face other than the perpetrator), and the use of the "don't know" option. Means are provided in the upper portion of Table 1. First, picture size was found to have a significant effect for hits ($F$ (1,97) = 56.035, MSE = 2.738, p <.05), misses ($F$ (1,97) = 7.846, MSE = .367, p <.05), foil identifications ($F$ (1,97) = 11.459, MSE = .438, p <.05), and the use of the "don't know" option ($F$ (1,49) = 9..816, MSE = .303, p <.05). In each case, picture size had the intended effect of improving memory for the face. Large pictures yielded higher accuracy than small pictures. As might be expected, Free Report participants used the "don't know" option more when memory was poorer (i.e., when they had seen a small face). The effect of condition was only statistically significant for misses ($F$ (1,97) = 5.590, MSE = .370, p <.05), with free report participants having a lower miss rate *(*$M$ = .205*)* than forced report ($M$ = .270). For foil identifications, an interaction between size and condition was found (F (1,97) = 5.316, MSE = .203, p <.05) . Further analysis indicated that in the forced report condition, there was significantly higher erroneous identifications for small *(*$M$ = .291*)* vs. large studied faces ($M$ = .170) (F (1,97) = 5.310, MSE = .361, p <.05). In the Free Report condition, the difference between false identifications made for small *(*$M$ = .132*)* vs. large ($M$ = .140) faces was not significant (F (1 97) = .041, MSE = .001, p >.05). No other interactions were significant.

*Target-Absent Lineups*. Target-absent lineups (lineups in which the perpetrator is not present) were analyzed in terms of response type: correct rejections (correctly indicating that the perpetrator is not present), false alarms (incorrectly choosing one of the lineup faces), and the use of the "don't know" option in the free report condition. Means are provided in the lower portion of Table 1. Picture size was found to have a significant effect for correct rejections ($F$ (1,97) = 20.436, MSE = 1.184, p <.05) and false alarms ($F$ (1,97) = 15.497, MSE = .769, p

<.05) , but not the use of the "don't know" option ($F$ (1, 49) = 2.657, MSE = .090, p > .05) . As expected, correct rejections were higher and false alarms lower when participants had seen the big rather than the small picture. The effect of condition was only significant for correct rejections ($F$ (1,97) = 5.446, MSE = .770, p <.05) with free report having a lower correction rejection rate ($M$ = .488) than forced report ($M$ = .612). For false alarms, an interaction between size and condition was found ($F$ (1,97) = 8.016, MSE = .368, p <.05) . Further analysis indicated that in the forced report condition, there was a significantly higher number of false alarms to target-absent lineups constructed to resemble faces which had been studied in a small *(M* =.495*)* vs. a large *(M* = .280*)* format ($F$ (1,48) = 22.737, MSE = 1.125, p <.05). In the free report condition, the difference between false alarms made for lineups based on small ($M$ = .395) vs. large ($M$ = .360) faces was not significant ($F$ (1,49) = .615, MSE = .031, p > .05). In other words, the "don't know" option allowed free participants to maintain similar false alarm rates to big and small pictures. This suggests the "don't know" option was helpful in reducing false identifications of similar looking faces when viewing conditions were poorer.

*Contextual Details*. Participants' memory for picture size and the associated crime word were also analyzed. For crime word and size judgments, correct judgments by chance are 10% and 50%, respectively. Probabilities for correct or consistent judgments for the crime word and size judgments are reported in Table 2.

As a general pattern, hits were associated with greater than chance performance for correctly recalling the crime word (one-sample t tests, p < .05). Participants were only above chance for correct picture size judgements for small pictures in the free report condition (t(42) = 3.983, p < .05). There was no significant effect of condition or picture size. In short, participants

could remember crime word details associated with the studied faces, but performed at chance levels for picture size judgments in all but one condition..

The contextual details that were attributed to false alarms were analyzed next. Remember that each of the target-absent lineups consisted of men who looked like the perpetrator. One question is whether participants will say that the person they picked out committed the same crime or appeared in the same size format (a consistent judgment). Crime word judgments were not above chance, and did not differ significantly by size or condition. Picture size judgments were similar across conditions, but differed between large and small pictures ($F$ (1,61) = 12.437, MSE = 1.804, $p < .05$). Consistent small picture size judgments were significantly higher than consistent large picture size judgments. At first glance, this might suggest that for small pictures, participants were attributing the "correct" size to a falsely chosen lineup member. However, it appears that there was overall bias to attribute false alarms as having been seen as a small picture. This is similar to the "it had to be you" effect sometimes seen in source monitoring research (e.g., Bink, Marsh & Hicks, 1999). In this research, participants are more likely to attribute false alarms (new items) to a "weaker," less well-remembered, source.

## General Discussion

Consistent with our hypothesis, size of the perpetrator's face at study had an effect on eyewitness identification, as perpetrators which were originally viewed in larger form (similar to an individual viewed up close) were more accurately identified than perpetrators viewed in smaller form (similar to individuals viewed at a distance). More importantly, the utility of the "don't know" option varied as a function of whether participants had good or poor memory for the face. In contrast to our prediction, the "don't know" option reduced false identifications

when participants had *poorer* memory for the perpetrator (small size at study), but had no significant impact when memory was better (large size at study). Finally, results indicated that participants were able to remember some contextual details from the time of study, as participants who correctly identified the perpetrator were able to remember the associated crime word at above chance levels. There was no evidence that false identifications were accompanied by recall of details consistent with the "real" studied face at above chance levels; although there was evidence of a bias to say that faces which were falsely identified had been seen in the small format at study.

One way that a "don't know" option might influence eyewitness decisions is simply to reduce responses based on guessing. Although there is some evidence for that (e.g., reduced misses in the Free than Forced Report), the availability of the option also seemed to impact the decisions participants made. This is evident in the fact that although the "don't know" option was not often used, its availability changed the pattern of responses participants made. In general, the "don't know" option was most beneficial when memory for the perpetrator was poor. More specifically, the option appeared to reduce or nullify the increased foil identification rate (for target-present lineups) and the increased false alarm rate (for target-absent lineups) observed in forced report participants when they had seen the small face rather than large one. Both of these incorrect response choices result from falsely identifying a foil as a perpetrator and may involve similar mental processes. By using the "don't know" option, free report participants were able to guard against the effects of poorer perpetrator memory on these incorrect response choices. This was contrary to our hypothesis which stated that participants would most benefit from the "don't know" option in situations where they had good memory for the perpetrator (i.e., the large pictures). In fact, performance was nominally worse (although not significantly) in the

free than the forced report condition when they had seen the large pictures. In general, it appears that the "don't know" option might lead participants to more carefully consider their identification decisions. In the case of poor memory for the perpetrator, such consideration does seem help in reducing some errors. However, when memory is good (i.e., when they got a good look at the perpetrator), this additional consideration either has no impact, or perhaps sometimes even leads them to make less accurate decisions.

Our results suggest that the "don't know" option may be helpful or harmful depending on situation in which it is offered. More research needs to be done on various encoding and retrieval conditions to determine the boundary conditions at which the "don't know" option changes in its utility. Without further research, it would be inappropriate to recommended the "don't know" option as part of law enforcement eyewitness procedure due to the increased need for a better understanding on how it impacts decision making in lineups.

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Table 1

Means for Response Choices by Size and Condition for Target-Present and Target-Absent Lineups

Target-Present Lineups

| | Large Picture | | | | Small Picture | | | |
|---|---|---|---|---|---|---|---|---|
| | Hits | Miss | Foil ID | DK | Hits | Miss | Foil ID | DK |
| Forced | .60 | .27 | .13 | | .33 | .38 | .29 | |
| Free | .565 | .205 | .14 | .09 | .365 | .265 | .17 | .20 |
| Difference | .035 | .065 | -.01 | | -.035 | .115 | .12 | |

Target-Absent Lineups

| | Large Picture | | | Small Picture | | |
|---|---|---|---|---|---|---|
| | CR | FA | DK | CR | FA | DK |
| Forced | .72 | .28 | | .51 | .49 | |
| Free | .535 | .36 | .105 | .44 | .395 | .165 |
| Difference | .185 | -.08 | | .07 | .095 | |

Table 2

Probability of Correct or Consistent Judgments on Associated Details for Hits and False Alarms

| | | Forced Condition | | Free Condition | |
|---|---|---|---|---|---|
| Response Type | Detail | Small | Large | Small | Large |
| Hit | Crime Word | .32* | .41* | .40* | .54* |
| Hit | Size | .58 | .58 | .73* | .59 |
| FA | Crime Word | .06 | .11 | .10 | .10 |
| FA | Size | .61* | .41 | .62 | .36* |

Note. Correct judgments involve picking the target from the target-present lineup and correctly remembering his associated detail. Consistent judgments involve picking anyone from a target-absent lineup and picking a detail which was associated with the missing target. For crime word and size judgments, chance is 10% and 50%, respectively.*Significantly different from chance, one-sample t, $p < .05$.