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Eyewitness Identification: Research, Reform, and Reversal☆

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Eyewitness identification research and reform are being reconsidered in light of research suggesting that reforms that were once thought to increase identification accuracy may have little effect on accuracy or may actually decrease accuracy. This article addresses three questions: How should eyewitness identification procedures be evaluated? How can the research-policy collaboration prevent policy revisions and reversals? And how can the research-policy collaboration prepare for revisions and reversals?

Keywords: Eyewitness identification, Public policy, Policy reversals, Scientific reversals, Eyewitness identification reform and best practices

Mistaken eyewitness identification errors have long been implicated as a major contributing factor in false convictions of the innocent (Gross & Shaffer, 2012; Munsterberg, 1908). The relationship between mistaken eyewitness identifications and false convictions has been established most dramatically in post-conviction appeals in which DNA evidence established the error of the identification and the innocence of the defendant (Garrett, 2012; Gross & Shaffer, 2012).

This linkage between false identifications and false convictions has given energy to a movement to reform the police procedures used to obtain eyewitness identification evidence as well as the legal procedures that regulate how that evidence is evaluated by judges and juries. Many of these reforms have already been adopted through legislation or as law enforcement best practices. But now the road to reform seems less clear, as recent scientific evidence suggests that some recommended procedures may not increase the accuracy of eyewitness evidence or criminal justice outcomes—and may even lead to decreases in accuracy. The new evidence implies possible policy revisions and reversals—specifically that new procedures that were once recommended will no longer be recommended.

This article provides a brief review of some of the key reforms and raises three questions: How should proposals for reform be evaluated? How can policy reversals be avoided? And—on the view that some policy reversals and revisions are inevitable—how can policy makers prepare for them?

Research and Reform

There are two general procedures used by police to collect eyewitness identification evidence. In a one-person showup, the police present a single suspect to the witness and ask if that suspect is the person who committed the crime. In a typical lineup, police present the witness with a single suspect along with some number of fillers—other lineups members who are known to be innocent.

Eyewitness identification experiments simulate these conditions by presenting participants with a staged crime, live or on video, followed by a lineup or showup. Participants make an identification response and provide an indication of their confidence in that response. Researchers typically compare two conditions, one in which the suspect is guilty and one in which the suspect is innocent; thus the true identity of the perpetrator is known.

Eyewitness researchers have made dozens of recommendations designed to increase the reliability of eyewitness evidence. In recent years, the field has zeroed in on a few key recommendations that have been identified as best practices and in some

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cases incorporated into legislation. These recommendations include:

1. Avoid the use of one-person showup identification procedures.
2. Construct lineups so that the suspect does not stand out.
3. Provide instructions to the witness, stating that the perpetrator of the crime may not be present, and that they are not required to identify anyone.
4. Present lineups sequentially, one person at a time, rather than simultaneously with all lineup members at the same time.
5. Lineups should be administered by a person who is blind or blinded as to the position of the suspect in the lineup.
6. Ask the witness to provide a statement of confidence in his or her identification response.

These recommendations have been incorporated into police procedures through various mechanisms. In some cases, states have signed certain police procedures into law. For example, New Jersey, Connecticut, and North Carolina require that police departments present lineups sequentially, rather than simultaneously. Other states, including California, New York, and Rhode Island, have not implemented reform through legislation, but have developed guidelines and model policies at the state or county level. For many U.S. states the policies are non-existent or unclear. This variation across states raises the question: What standard should be applied in deciding which procedures to use? This question is important, because, depending on the standard that is applied, one could accept or reject all of the current reforms. We explore this question regarding the assessment of eyewitness identification procedures next.

Assessment of Eyewitness Identification Reforms

Increased Accuracy With No Cost–Benefit Trade-Off

One very high standard for the adoption of a new procedure is that it should produce benefits, with little or no cost. In the realm of eyewitness identification reform the claim has been made that the recommended reforms increase accuracy either by reducing the risk of false identifications with little or no reduction in correct identifications, or by increasing the correct identification rate with no increase in false identifications.

If these no-cost claims were true, policy decisions to implement the reforms would be relatively simple. The reform procedures would formally dominate the old procedures such that a decision to not implement them would appear irrational. However, the no-cost claim is unambiguously contradicted by data for most of the proposed reforms (Clark, 2012). Thus, the policy decisions almost always involve cost–benefit trades-offs, making the policy decisions much more complicated.

Increased Accuracy With Cost–Benefit Trade-Off

In the 20/20 hindsight of the data, the no-cost standard seems unrealistic. However the goal of increased accuracy can still be achieved even with trade-offs in errors—to the extent that recommended procedures reduce false identifications more than they reduce correct identifications, or increase correct identifications more than they increase false identifications. This raises questions about how one measures overall accuracy and what trade-offs are acceptable.

Measurement of Overall Accuracy

Simply put, the overall accuracy of identification outcomes will be high to the extent that the correct identification rate is high and the false identification rate is low. Despite that simple principle, the discussion of the various measures of overall accuracy (also referred to as diagnostic accuracy) may become rather technical. Prior to 2012, overall accuracy was typically measured as the ratio of correct identifications to false identification, C/F (Wells & Lindsay, 1980). However, the C/F ratio measure conflates accuracy and response bias. Specifically, when witnesses become more conservative, lowering both the correct and false identification rates, the C/F ratio increases. More recently, researchers have begun reporting measures of overall accuracy derived from signal detection theory, including d' and the area under the receiver operating characteristic (ROC) curve. The measure d' generally approximates the ROC curve, and can be used in lieu of ROC analysis in the absence of confidence or bias partitions (Mickes, Moreland, Clark, & Wixted, 2014). Clark (2012) and Palmer and Brewer (2012) used different calculations of d' for meta-analyses where ROCs could not be calculated. Rather than expand on the technical details, we simply note that these signal detection measures, ROC analysis and d', are broadly used in the medical and social sciences as measures of diagnostic accuracy and risk assessment. However, their specific application to eyewitness identification has not been embraced by all researchers (see Wells, Smalarz, & Smith, 2015 and Wixted & Mickes, 2015a, 2015b for a debate on this point).

Assessment of Acceptable Trade-Offs

When considering cost–benefit trade-offs one needs to take into account the relative costs of the two kinds of errors, false identifications of the innocent versus missed identifications of the guilty, as well as the opportunities for those two kinds of errors to occur (Clark, 2012). There is widespread agreement that the costs associated with a false conviction are greater than those associated with a false acquittal (see Volokh, 1997). To the extent that this cost inequality applies to identification evidence the costs associated with a false identification of an innocent suspect will be greater than the costs associated with a false non-identification of a guilty suspect. Optimal identification procedures will reflect this cost inequality by making the more costly error less likely than the less costly error. In assessing these error rates one must also consider the guilty and innocent base rate: the proportions of identification procedures for which the suspect is guilty or innocent. Optimal identification procedures should also reflect these error opportunities defined by the guilty and innocent base rates.

Importantly, these considerations are not about the diagnostic accuracy or the discriminability between suspects who are guilty versus innocent. Rather, they are about the criterion