An eyewitness takes the stand and describes salient aspects of an event that he or she witnessed several months earlier. Then, in the hush of the courtroom, points to the defendant and says "That's him. That's the man I saw." Simple, clean, and convincing. And therein rests the problem; what appears to be a simple identification is in fact the result of a series of complex and potentially unreliable social and cognitive events that began unfolding several months earlier when the event was originally witnessed.

This chapter, and much of the empirical research on which it is based, operates on an assumption that there are two sources of unreliability in eyewitness accounts. First, there are some inherent limitations in human information processing. These limitations exist at sensory levels (for example, Sperling, 1960), attentional levels (for example, Broadbent, 1958; Deutsch & Deutsch, 1963; Triesman, 1964), and memory levels (for example, Miller, 1956; Atkinson & Shiffrin, 1968). But inaccuracies in eyewitness accounts are not entirely attributable to human imperfections in sensation, perception, and memory. The second source of inaccuracy in eyewitness accounts can be attributed to the methods the justice system uses to obtain information from eyewitnesses. The work of Elizabeth Loftus on the effects of misleading questions serves to make this point (see Loftus, 1979; and this volume). The account one gets from an eyewitness depends very much on the methods used to solicit the information.

The study of how to improve eyewitness accuracy by manipulating the methods used to obtain information from eyewitnesses is known as a system-variable approach to eyewitness research (Wells, 1978). Unlike studies of the inherent deficiencies of eyewitnesses, system-variable research can inform us of ways to improve the accuracy of eyewitness accounts. The purpose of this chapter is to review what we have learned about the best ways to obtain eyewitness identifications. Our concern is with how to minimize false identification rates and maximize accurate identification rates.

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We begin with the assumption that there is an identification problem. Wells (1992) argued that there are three observations consistent with this assumption. First, a large number of experiments using simulated or staged crime methods have found that false identifications occur with surprisingly high frequency (for example, Brigham & Cairns, 1988; Brigham, Maass, & Snyder, 1982; Buckhout, 1974; Cutler, Penrod, & Martens, 1987; Davies, Ellis, & Shepherd, 1978; Ellis, Shepherd, & Davies, 1980; Leippe, Wells, & Ostrom, 1979; Lindsay, 1986; Lindsay & Wells, 1980; Lindsay & Wells, 1985; Lindsay, Wells, & Rumpel, 1981; Loftus & Greene, 1980; Malpass & Devine, 1981; Parker & Caranza, 1989; Shepherd, Ellis, & Davies, 1982; Wells, 1984; Wells, Ferguson, & Lindsay, 1981; Wells & Leippe, 1981; Wells, Lindsay, & Ferguson, 1979). Second, there is considerable research evidence indicating that there is a "sincerity" to most of the false identifications observed in these experiments; the eyewitnesses often seem actually to believe that their false identifications are in fact accurate identifications. They express considerable levels of subjective confidence in their identifications and give testimony in a persuasive fashion (for example, see Deffenbacher, 1980; Leippe, 1980; Luus & Wells, 1992; Murray & Wells, 1982; Wells & Murray, 1984). Third, analyses of over a thousand actual cases of wrongful convictions have revealed that eyewitness error was the single largest factor leading to these miscarriages of justice (see Borchard, 1932; Frank & Frank, 1957; Brandon & Davies, 1973; Huff, Ratner, & Sagarin, 1986).

These three observations, two of which are based on experimental research and one on case studies, lead us to believe that there is in fact an important problem to be addressed. Our attempt to address the eyewitness identification problem is guided in a general sense by the system variable approach described earlier. In this chapter we go one step further by proposing a theoretical framework followed by a set of specific recommendations for the best ways to conduct identification tasks.

It might be fair to argue that the eyewitness identification process has not yet been described in a coherent theoretical framework. (By eyewitness identification process we mean the social and cognitive processes involved in the eyewitness's decision to identify or not identify a particular member of a lineup.) We attempt to rectify that deficiency here by showing how we may be able to tie together a number of empirical observations by reference to a small number of propositions and corollaries. We admit from the outset that the result is not a true theory in the sense that a strict theoretician might use the term. Nevertheless, we present what we think is a useful framework for the understanding, prediction, and control of the eyewitness identification process. By pointing out how each recommendation is related back to a proposition or corollary, we hope to show that these recommendations are not just a haphazard collection of observations but instead are parts of an interrelated framework.
Propositions

Our recommendations on how to properly conduct a lineup are tied together by an interrelated set of two propositions and a major corollary. In some cases the recommendations are derivations from the propositions. In other cases, recommendations represent hypotheses that have been tested empirically. The empirical tests of these hypotheses in turn reflect back on the plausibility of the propositions and the corollary. In this section, we introduce the two propositions and the corollary.

Proposition I: The purpose of a lineup is to uncover information in an eyewitness's recognition memory that was not available in recall. (Luus & Wells, 1991)

The general truth value of Proposition I is self-evident. If it were the case that an eyewitness's verbal description of a culprit were sufficiently diagnostic of the identity of the culprit, then why would a lineup be conducted at all? In relatively rare cases, a verbal description has this level of diagnostic value. For instance suppose an eyewitness describes a culprit as a Caucasian male, about five feet tall, with a tattoo on his left hand that says “War is Hell,” a two-inch scar over his left eye that is shaped like a pear, and a missing eye tooth on the left top side. If the police find a suspect with exactly these features, would a lineup be necessary? No. We conduct lineups because verbal descriptions typically do not contain a level of information that allows us to definitely decide whether our suspect is the culprit or not.

The idea that there is information in eyewitnesses' recognition memories that is not verbally recallable is consistent with the empirical observation that there is little statistical relation between various measures of verbal recall for faces (for example, accuracy, fluency, consistency, completeness) and recognition accuracy (for example, Pigott & Brigham, 1985; Wells, 1985). Statistically, this means that recall and recognition for faces account for different aspects of the variance in accuracy.

A derivation from Proposition I says that the diagnostic value of conducting a lineup increases as the diagnostic value of an obtained verbal description decreases. In other words, if the eyewitness's description is especially useless (the witness can only say that the culprit was a male of average height with medium-length hair), a lineup must be conducted to see if the witness can further reduce that uncertainty by identifying a particular suspect. If that uncertainty has already been reduced to near zero based only on the witness's verbal description, then a lineup task is not likely to further reduce our uncertainty.

Although the plausibility of Proposition I is somewhat self-evident, it is surprising to us how little this proposition has been exploited in certain domains, especially as it relates to the question of how distractors in lineups
should be selected. As we describe later in connection with our recommenda-
tions for selecting distractors, a good distractor is one who fits the verbal
description but varies in appearance from the suspect on features that were
not a part of that description. This derivation is qualitatively and importantly
different from the simple idea that distractors should look like the suspect
but not too much like the suspect. We reject the latter idea as rather useless
in a practical sense as well as imprecise; it is misleading and unnecessarily
damaging to the overall value of the lineup to follow such a strategy.

Proposition II: The identification process is governed not only by simple me-
morial factors but also by extramemorial judgment and heuristic processes.

If proposition II were not true, and identification were a pure and simple
memory process, we would not care about certain methods of conducting
identification tasks. For example, what would it matter if the police told the
eyewitness prior to viewing a lineup that person number three is the suspect
and the remaining lineup members are actually police officers? Presumably,
this would put considerable social pressure on the eyewitness to identify
person number three. The eyewitness would know the police want a positive
identification of person number three and must decide whether or not to give
them the response they want. This is a way of saying that an eyewitness’s
identification decision is just that; it is a decision. Like all decisions, it can
be said to be preceded by a set of judgments. Some of these judgments are
perceptual or memorial but are based on external sources of information,
social pressures, inferences, and heuristic processes.

One of these heuristics is the relative judgment heuristic (Wells, 1984). The
relative judgment heuristic is a strategy for making a positive identification
in which the eyewitness chooses the lineup member who most closely resem-
bles the culprit relative to the other lineup members. Like other heuristics,
the relative judgment heuristic works very well under one set of conditions
but leads to error under another. The problem arises when people cannot or
do not distinguish between conditions where the heuristic is functional and
conditions where it is dysfunctional. In the case of the relative judgment
heuristic, it is marvelously efficient and productive when a lineup contains
the actual culprit, but it is dangerous and damaging when it does not. As will
be evident later in this chapter, the relative judgment heuristic has led to
some testable derivations for improving lineup procedures.

Corollary to Proposition II: A lineup task can be likened to a social psychology
experiment: Factors that can confound the interpretation of an experimental
outcome can similarly confound the interpretation of the outcome of a lineup
task.

Our corollary can be thought of as a simple analogy between the set of
rules that describe a good design and procedure for conducting an experiment
on the one hand, and the set of rules that would describe a good design and procedure for conducting a lineup on the other. In this sense our corollary is relatively powerful because it draws on a large and respected body of literature on experimental research methods and sources of threat to validity (for example, Aronson & Carlsmith, 1968; Rosenthal, 1976).

For example, we know from the logic of experimental procedure that a researcher should not reveal the research hypothesis to the subject until all the relevant data are collected. Analogously, if an eyewitness identifies someone from a lineup, the lineup administrator should not tell the witness whether the identified person was the suspect (versus one of the distractors) if he still expects to get a meaningful answer to the question of how confident the witness is in his or her identification. Any lineup administrator who leaks the hypothesis (for example, that number three in the lineup is the culprit) and then collects additional data from the eyewitness has contaminated the meaning of those data. They should thereby be rejected just as surely as any experimenter’s data that rested on a similar error should be rejected.

Some fundamental distinctions and assumptions

A lineup might or might not contain the actual culprit. If one thinks of a lineup as an array of persons that includes the culprit, and the task of the eyewitness as one of finding the culprit among the array, one is depicting the situation in a limited and ecologically invalid manner. In actual cases, as well as in our experiments, the culprit is absent from the lineup on at least some occasions. For instance, in actual cases the police might have arrested an innocent suspect and the actual culprit is still at large. We use the terms “culprit present” and “culprit absent” to distinguish between these two states of affairs. The consequences of being in the culprit-present state versus the culprit-absent state are enormously different. Because we cannot be certain in actual cases whether or not the lineup includes the culprit, any claim for a superior lineup identification procedure must be tested under both possible states.

A distinction must also be made between culprits, suspects, and distractors. A suspect is one who is merely suspected of being the culprit, but might in fact be innocent. Hence, when we refer to the identification of a suspect we do not mean that this is an accurate identification; we mean only that the eyewitness identified the lineup member whom the police suspect is the culprit. A distractor is not a suspect. A distractor is a member of the lineup who is known to be innocent of the offense in question. A distractor might be a police officer, someone from a jail cell, or a citizen of the community. If an eyewitness identifies a distractor, the identification is readily dismissed (“I’m sorry Mrs. Miller, but you identified someone who was in a jail cell at the time you were robbed”).
With these distinctions in mind, we now impose an assumption. The assump­tion is that a lineup is composed of only one suspect (who might or might not be the culprit) and the remaining lineup members are innocent distractors. This assumption is not fully grounded in police practices. Wells and Turtle (1986) reported that perhaps as many as one of every three police lineups fails to use distractors but instead uses several suspects. The dangers of this practice in terms of controlling false identification rates have been documented and will not be reviewed in detail here (see Wells & Turtle, 1986). Suffice it to note for current purposes that the likelihood of false identification is additive across the number of suspects in a lineup and that the failure to use innocent distractors in a lineup is akin to giving the witness a multiple-choice test in which there can be no wrong answer. Using distractors known to be innocent, on the other hand, allows the police to use a "grading key" of sorts; if a distractor is identified, the identification can clearly be classified as an error and the eyewitness can justifiably be discredited to some extent.

Finally, we distinguish between an identification error and a false identification. Although a false identification is an error and an error is a false response, we reserve the term false identification for instances in which the eyewitness identifies an innocent suspect; if the eyewitness identifies a distractor we call this a foil identification or distractor identification. As already noted, the consequences of identifying a distractor versus a suspect are profoundly different. The former would never result in charges being brought against the identified person whereas the latter usually would.

An integration of these distinctions and assumptions allows us to state that a false identification cannot occur when the actual culprit is a member of the lineup. This follows from our definition of a false identification (identification of an innocent suspect) in conjunction with the assumption that the lineup contains only one suspect. Conversely, false identifications can occur only when the lineup does not contain the actual culprit. Identification errors (that is, distractor identifications), on the other hand, can occur in either a culprit-present or a culprit-absent lineup.

Recommendations on conducting lineups

Having stated our basic propositions, assumptions, and distinctions, we are now prepared to state our recommendations. Each recommendation is accompanied by discussion of its relation to one of the two general propositions and, whenever possible, to empirical data supporting the recommendation. We have organized these recommendations according to the order we think the relevant issue would arise when someone is considering conducting a lineup in a given case.
Recommendation 1: *Verbal descriptions of the culprit should be obtained from all eyewitnesses prior to conducting a lineup.* As will be noted in greater detail later, verbal descriptions of the culprit are essential to making decisions about the selection of appropriate distractors. In general terms, Recommendation 1 follows from the logic of our first proposition, namely that the purpose of a lineup is to uncover information from a recognition memory task that was not available in recall. There are other forensically relevant reasons for this rather obvious recommendation. For example, if the eyewitness is ever brought into court to testify about the witnessed event, she or he will be asked to describe the culprit from memory. If a prelineup description was not obtained earlier one cannot be sure whether the verbal description is being retrieved from the original event or if it is merely a description of the person the witness identified in the lineup. Only if there is a record of what the witness recalled about the culprit prior to viewing the lineup can we be certain about how to interpret the witness’s in-court description.

Recommendation 2: *A lineup should contain at least five appropriate distractors for every one suspect.* We define later what makes a distractor “appropriate.” The purpose of this recommendation is to set a minimum standard for the number of distractors. The number five is somewhat arbitrary in the same sense that the number six for a minimum sized jury is arbitrary. There is no threshold number below which the dangers of false identification are significant and above which they are not. On the other hand, there are clear theoretical arguments about the rate at which false identifications can be expected to decline as a function of the ratio of distractors to innocent suspects (see Doob & Kirshenbaum, 1973; Lindsay & Wells, 1980; Wells, in press). The decline in false identification rates as a function of the number of good distractors should be a diminishing return function. That is, adding a good distractor when there are only two other good distractors should have more impact than adding a good distractor when there are six or ten other good distractors.

The only empirical data bearing directly on the question of how many good distractors should be used in a lineup or photo spread comes from a study by Nosworthy and Lindsay (1990). Their data indicate that the addition of good distractors beyond a nominal size of three provides little or no additional protection for an innocent suspect. We note, however, that Nosworthy and Lindsay’s study selected “good” distractors by using a resemblance-to-suspect criterion rather than a match-to-description criterion. This might have implications for the shape of the function relating the number of good distractors to the risk of false identifications of the suspect.

A critical element of Recommendation 2 is that it specifies a ratio of suspects to distractors rather than a ratio of suspects to total lineup members. Recall
that a distractor is a lineup member known to be innocent. Hence, suspects cannot count as distractors for other suspects. For example, if there are two people suspected of being the culprit in question and the police want to conduct a single lineup containing both suspects, each suspect would have to have five separate distractors, resulting in a total of ten distractors. Counting the two suspects, this lineup would have a minimum number of twelve members.

Readers are referred to Wells and Turtle (1986) for a more thorough treatment of the problem of the ratio of suspects to distractors. In general, we agree with Wells and Turtle that a lineup should have only one suspect with the remaining members being innocent distractors. We have worded Recommendation 2, however, to accommodate the practical concern that it might be difficult or perhaps impossible to narrow the range of suspects to only one in a given real-world case. We see no room to compromise on the fact that an adequate ratio of suspects to distractors is critical in controlling the rate of false identifications. This point becomes more obvious when we consider the case of an all-suspect (no distractor) lineup. Suppose there were six suspects and each served as a foil for the others. Suppose now that the eyewitness makes a random choice for his or her identification. In this case chances are at least five in six that the identification would be a false identification. If there were only one suspect and the other five were distractors, however, the chance of a false identification from this, a mere guessing strategy, falls to one in six or less. The remaining five chances out of six represent identification errors, but they are identifications of innocent people who are not at risk of false accusation, and thereby need not fear being charged with the offense.

Recommendation 3: Distractors should be chosen to match the eyewitness's verbal description of the culprit. This follows from Proposition I, which states that the purpose of the lineup is to uncover information from recognition memory that was not available in verbal recall. If the suspect is the only one who matches the witness's verbal description, the lineup (recognition) task cannot be said to serve the function stated in our first proposition. Specifically, under such conditions we cannot determine whether an identification of the suspect was something that went beyond what the witness was already able to report (that is, the witness relied on the earlier description) or whether we actually have a process of recognition that went beyond the recall level.

Recommendation 3 has received wide attention among eyewitness identification researchers. Doob and Kirshenbaum (1973) and Malpass (1981) have written extensively about this problem and there are empirical data showing how the innocent suspect is protected (without significant loss in rates of identifying the actual culprit) by following Recommendation 3 (see Lindsay & Wells, 1980; Wells, Seelau, & Rydell, 1992). Wells et al. (1978) as well as Malpass (1981) and Malpass and Devine (1983, 1984) have proposed ways to
measure the extent to which Recommendation 3 has been effectively met in a given case.

Recommendation 3 follows not only from Proposition I but also from Proposition II and its corollary. Previous writings have almost exclusively treated the idea in Recommendation 3 as an issue of extramemorial influences on the judgment and decision processes of eyewitnesses. Wells and Luus (1990), for example, argued that violations of Recommendation 3 allow the eyewitness to discern the hypothesis of the police, thus placing social pressures on the witness to choose the only person who matches the description.

Recommendation 3a: *In cases where the eyewitness's description of the culprit does not match the suspect's appearance, the suspect's appearance on the discrepant feature(s) should be used rather than the eyewitness's description of that (those) feature(s).* A discrepancy between the eyewitness's description of the culprit and the appearance of the suspect is not unusual. This could happen for three reasons. First, the suspect might not be the culprit. Second, the eyewitness's description might include errors of recall. Third, the suspect might be the culprit and the eyewitness's description might be accurate, but the culprit might have altered his or her appearance between the time of the witnessed event and the lineup. Recommendation 3a states that the suspect's actual appearance on the discrepant feature(s) constitutes the default descriptor for selecting distractors. This strikes us as the only viable solution to the suspect-description discrepancy. If one were to select distractors who match the description when the suspect does not match the description, then the suspect might stand out as being distinctive in the set of lineup members. It is important to note, however, that the suspect's appearance on given features is used as the default only for those features on which there is a discrepancy between the witness's description and the suspect's appearance.

Recommendation 4: *The set of potential distractors who match the description should exceed the number of distractors needed so that any who show undue resemblance to the suspect can be discarded from the set that is used.* This is our most controversial recommendation and, as far as we know, has never been advocated in print. Hence, we will take extra care to document its rationale.

Recommendation 4 follows generally from our first proposition, that the purpose of a lineup is to uncover information in recognition memory not available in recall. The theoretical underpinnings for Recommendation 4 can be found in Luus and Wells's (1991) article on strategies for selecting distractors for lineups. Here, however, we have taken their developments one step further.

The general idea behind discarding distractors who too closely resemble the suspect is to allow the eyewitness greater levels of perceptual discrimi-
Table 11.1. Hypothetical set of four lineup members who match the eyewitness’s description but vary on nondescribed features

<table>
<thead>
<tr>
<th>Features part of eyewitness’s description of culprit</th>
<th>Person A</th>
<th>Person B</th>
<th>Person C</th>
<th>Person D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Features not part of eyewitness’s description of culprit</td>
<td>male</td>
<td>male</td>
<td>male</td>
<td>male</td>
</tr>
<tr>
<td>Caucasian</td>
<td>Caucasian</td>
<td>Caucasian</td>
<td>Caucasian</td>
<td>Caucasian</td>
</tr>
<tr>
<td>5'10”-6'</td>
<td>5'10”-6'</td>
<td>5'10”-6'</td>
<td>5'10”-6'</td>
<td></td>
</tr>
<tr>
<td>170-175 lbs</td>
<td>170-175 lbs</td>
<td>170-175 lbs</td>
<td>170-175 lbs</td>
<td></td>
</tr>
<tr>
<td>mustache</td>
<td>mustache</td>
<td>mustache</td>
<td>mustache</td>
<td></td>
</tr>
<tr>
<td>short hair</td>
<td>short hair</td>
<td>short hair</td>
<td>short hair</td>
<td></td>
</tr>
<tr>
<td>brown hair</td>
<td>brown hair</td>
<td>brown hair</td>
<td>brown hair</td>
<td></td>
</tr>
<tr>
<td>30-35 yrs old</td>
<td>30-35 yrs old</td>
<td>30-35 yrs old</td>
<td>30-35 yrs old</td>
<td></td>
</tr>
</tbody>
</table>

nation among the lineup members. It is critical to keep in mind, however, that the remaining distractors must still match the description of the culprit as recalled by the eyewitness. Hence, Recommendation 4 in no sense violates Recommendation 3, nor in any sense should it produce a bias against the suspect.

Recommendation 4 is an attempt to increase propitious heterogeneity (helpful differences) in the appearance of lineup members so that the guilty suspect stands out for the witness but an innocent suspect would not. In general, variation in appearance across lineup members is not inherently bad unless that variation leads to bias against the innocent suspect. Those who have argued that a good lineup is one in which the distractors are selected to resemble the suspect have been promoting a fallacious strategy logic. Distractors must match the witness’s description of the culprit, but no further protection to the innocent suspect is logically or theoretically gained by pressing for additional similarity. Instead, the practice of going beyond the witness-description criterion serves merely to reduce propitious heterogeneity and, in effect, protect the guilty suspect.

Potential resistance among psychologists to the idea of maximizing propitious heterogeneity might stem from disbelief that increasing differences in the appearance of lineup members can be done without prejudicing responses against an innocent suspect. We offer Table 11.1 as an illustration of our point that heterogeneity per se is not tantamount to increased risk of an innocent suspect being identified. In this example, the eyewitness described
the culprit as a Caucasian male, about thirty or thirty-five years old, with short brown hair and a mustache, five feet, ten inches to six feet tall, and weighing one hundred seventy to one hundred seventy-five pounds. No other information could be recalled. Notice that each of the four lineup members matches this description, thereby satisfying Recommendation 3. Should we go further to make certain that the distractors also match the suspect on additional features such as eye color, shape of chin, and so on? We argue that one should not try to match these additional features. As evidence that this hypothetical four-person lineup in Table 11.1 is not biased against an innocent suspect, we ask at this point that the reader try to guess which person (A, B, C, or D) is the suspect. Notice there is no way for the reader to make this determination. That is exactly our point. If only one of the four members matched the eyewitness’s description on the above-the-line features in Table 11.1, then it would be possible to deduce (using only the description) which lineup member is the suspect. But variation below the line in Table 11.1 does not allow such deductions.

Hence, the only reason the eyewitness should prefer one lineup member (member B, for instance) over the others is if that lineup member is the culprit or by chance happens to look like the culprit on the features that were not part of the description. But each lineup member has an equal a priori likelihood of looking like the culprit by mere chance on the nonrecalled features. Thus, there is no bias against the suspect.

How would we know if an attempt to achieve propitious heterogeneity somehow inadvertently created a malevolent form of heterogeneity that biased the lineup against the suspect? Luus and Wells (1991) argued that a lineup must still pass tests of having adequate functional size. Readers are referred to the chapter by Brigham and Pfeifer (this volume) for a discussion of the methods for measuring functional size and related measures of the fairness of a lineup.

We put our theory of propitious heterogeneity to the test in a recent experiment (Wells et al., 1992). We staged thefts for 252 unsuspecting eyewitnesses in groups of two to four in size. There were seven different thieves (thirty-six witnesses per thief) that varied in appearance (two were African American, one was Asian, four were Caucasian; four were female, three were male). Witnesses were separated immediately after the theft and asked to provide a written description of the thief. Eyewitnesses were randomly assigned to one of three conditions: (1) A low functional size lineup was constructed in which only the suspect matched the eyewitness’s description; (2) a lineup was constructed in which the distractors were chosen to be similar in appearance to the suspect; (3) a lineup was constructed in which distractors matched the eyewitness’s description but were otherwise dissimilar to the suspect. Half of the eyewitnesses in each lineup condition viewed a lineup containing the actual thief and half viewed a lineup in which an innocent
suspect replaced the thief. Eyewitnesses were told that the actual thief might or might not be present.

The data in Table 11.2 show a clear pattern. Accurate identifications were equally high for the low functional size and match-to-description lineups and both were significantly higher than the resemble-suspect lineup. The important point, however, is that the match-to-description strategy held false identification rates down to the same low level that the resemble-suspect strategy was able to achieve.

The strategy of selecting distractors who match the eyewitness's description of the culprit but otherwise do not resemble him or her is an effective strategy for holding false identification rates down to a level comparable to that in strategies that attempt to make the distractors look like the suspect. At the same time, the match-to-description-but-maximize-propitious-heterogeneity strategy manages to secure accurate identification rates comparable to those in a lineup biased against the guilty suspect. Readers are encouraged to read the Luus and Wells (1991) article for a more detailed analysis of the theoretical underpinnings of this important aspect of selecting distractors as well as an analysis of special problems that can arise.

Recommendation 5: Separate lineups should be conducted for each eyewitness in multiple-witness cases. Minimally, the positioning of the suspect and foils should be different for each lineup; in some cases different distractors should
be used. The primary rationale for conducting separate lineups is to maintain some potentially critical elements of independence in the identification responses of the eyewitnesses.

By separate lineups, we mean not only that the eyewitnesses should not as a group view the lineup, but also that they should not view a lineup at the same time even if they are in separate viewing rooms. The rationale for this concern is that any bias in the lineup that might result from an unusual occurrence or the positioning of the suspect would replicate itself across each of the eyewitnesses. Separately conducted lineups, on the other hand, allow the suspect to be placed in more than one position in the lineup. If several eyewitnesses identify the suspect under conditions where he or she appears in a different lineup position for each eyewitness, then our certainty that the suspect was identified for reasons other than superficial features such as position in the lineup should increase. Changing the position of the suspect in the lineup also helps prevent more direct forms of interwitness influence, such as one witness telling another which person in the lineup is the suspect.

In general, Recommendation 5 follows from Proposition II and more specifically from the corollary to Proposition II. Recall that this corollary likens a lineup to a scientific experiment. In keeping with this analogy, we can have greater confidence in the validity of a conclusion when there is convergence across different measures (Campbell & Fiske, 1959). Changing the position of the suspect and distractors for each witness is a minimum requirement for claiming convergence of evidence.

In a behavioral experiment, there is a concern about the dangers of running several subjects who are assigned to the same experimental condition in the same session. The problem arises when there is a unique event that occurs in a given session, thereby affecting several subjects at once. Because each affected subject was in the same condition, it can appear that there was a large effect for the condition itself rather than merely a peculiar event in a given session. The solution in experiments is to randomly assign subjects to conditions within a session or to run only one subject per session (see Myers, 1972). This same concern applies to the way lineups are conducted. If two or more eyewitnesses view the same lineup in the same session, even if the eyewitnesses are in separate viewing rooms, any peculiar events will affect all the eyewitnesses and their identification responses can be correlated for spurious reasons.

When there are multiple eyewitnesses, there is a strong likelihood that the descriptions of the culprit will vary across those eyewitnesses. When this occurs, each eyewitness might require a different set of distractors. At the very least, it would be unacceptable to use one eyewitness's description of the culprit to select distractors for a second eyewitness if the latter's description were more detailed than that of the former. Suppose, for example, the first eyewitness described the culprit as a white male, twenty to twenty-four
years of age, and about six feet tall, whereas the second described the culprit similarly but added that he had dark, curly hair and a mole on his left cheek. Suppose further that the suspect was a twenty-two-year-old Caucasian male, six feet, one inch tall, with dark curly hair and a mole on his left cheek. In this case, it is permissible to use the shorter description to select distractors only for the first witness. The second witness must have distractors who match the second witness’s description.

Recommendation 6: The lineup administrator should not be aware of which person in the lineup is the suspect and which persons are distractors. We realize this recommendation might be difficult to follow in small police departments, but we see no reason why larger police departments cannot follow this practice. The recommendation follows from Proposition II in general and its corollary in particular. In the experimental analogy, this recommendation parallels the rationale for keeping experimenters blind to experimental conditions (Rosenthal, 1967).

That there are expectancy effects, wherein the experimenters’ hypotheses, hunches, or desires for obtaining a particular response from a research subject affect the likelihood of obtaining such responses, is not in doubt. Rosenthal and Rubin (1978) conducted a meta-analysis of 345 studies of expectancy effects and found a mean correlation of r = 0.33 between experimenters’ expectations and subjects’ behaviors under conditions where the expectations alone were the causal agents.

Fanselow (1975) demonstrated that the lineup administrator’s nonverbal behaviors can influence eyewitness identification responses. In Fanselow’s study subject witnesses viewed a photo lineup in which the lineup administrator was instructed to smile and show approval of a certain photograph. Although none of the photos was of the person in question, this nonverbal behavior led to an increased rate of selecting that photograph.

Recommendation 7: The eyewitness should be told explicitly that the perpetrator might or might not be in the lineup. This statement should be made when the eyewitness is initially asked to view a lineup and again just prior to viewing the lineup. Many eyewitnesses seem to approach a lineup with the assumption that the culprit is in the lineup and that their task is to decide which lineup member is the culprit (Malpass & Devine, 1981; Wells, 1984). This assumption, which we will call the culprit-present fallacy, has very serious consequences. Any lineup, even if it does not include the actual culprit, will have someone who more closely resembles him or her than do the other lineup members. Given that the culprit is not in the lineup, the culprit-present fallacy reinforces the already pervasive tendency to make relative judgments and identify the person who shows the closest resemblance to the culprit relative to the other lineup members.
Although telling the eyewitness that the perpetrator in question might or might not be in the lineup does not fully eliminate eyewitnesses' reliance on relative judgments (Wells, 1984; Wells, 1992), it does reduce the likelihood that they will select someone from a culprit-absent lineup (Malpass & Devine, 1981). This reduction in mistaken identification rates for culprit-absent lineups as a function of the “might or might not be present” instruction does not produce an appreciable decline in the likelihood that the culprit will be identified from a culprit-present lineup (Malpass & Devine, 1981).

The logic behind the “might or might not be present” recommendation is so powerful and important that it seems unlikely that anyone could seriously debate the necessity of including the statement. At the same time, however, police often approach a given lineup task with a firm belief that the suspect is the culprit in question. In a given case, for instance, the police might have definitive evidence against the suspect but be unable to use that evidence for some reason and, hence, need an identification from the eyewitness. In such circumstances, it might be difficult for them to “remember” to tell the eyewitness that the actual culprit might or might not be present. Although understandable perhaps, such forgetfulness is totally unacceptable. The eyewitness must understand the situation as one in which the actual culprit might not be in the lineup.

Recommendation 8: The eyewitness should first be asked to indicate whether or not the culprit is present in the lineup and only if the eyewitness makes an affirmative response should he or she be asked to indicate which lineup member is the culprit in question. This recommendation is consistent with Recommendation 7 in that the initial question to the eyewitness does not presume the culprit is among the lineup members. If the lineup administrator were first to tell the eyewitness that the culprit might or might not be present and then immediately ask which person is the culprit, the eyewitness has not been given a proper opportunity to act on a belief that the culprit is not among the lineup members. The lineup situation can have considerable demand characteristics that lead eyewitnesses to feel they are not doing their job or helping the cause of justice if they fail to identify someone. Eyewitnesses need to know that “he’s not there” or “I don’t know” are acceptable responses. In general, Recommendation 8 can be considered a derivation from the corollary to Proposition II. Recall that this corollary likens a lineup task to a behavioral science experiment; if we are interested in measuring someone’s beliefs, we must not imply with our procedures that some responses are better than others.

Recommendation 9: If an eyewitness identifies someone from the lineup, the eyewitness should be asked how certain he or she is that the identified person
is the culprit. This question should immediately follow the identification re­
response so that no extraneous factors can influence the eyewitness’s statement
of certainty. There is a large body of empirical research showing that the
certainty expressed by an eyewitness is poorly related to accuracy of identi­
fication (for example, Brigham, Maass, Snyder & Spaulding, 1982; Cutler,
Penrod, & Martens, 1987a; Cutler, Penrod, & Martens, 1987b; Cutler, Pen­
rod, O’Rourke, & Martens, 1987; Fleet, Brigham, & Bothwell, 1987; Gor­
enstein & Ellsworth, 1980; Greenberg, Wilson, Ruback, & Mills, 1979;
Hilgendorf & Irving, 1978; Hosch & Cooper, 1982; Hosch, Leippe, Mar­
chioni, & Cooper, 1984; Jenkins & Davies, 1985; Kassin, 1985; Krafka &
Penrod, 1985; Leippe, Wells, & Ostrom, 1978; Lindsay & Wells, 1986; Lind­
say, Wells, & Rumpel, 1981; Malpass & Devine, 1981a; Malpass & Devine
1981b; Murray & Wells, 1982; Pigott & Brigham, 1985; Sanders & Warnick,
1980; Sanders & Warnick, 1981; Shepherd, Ellis, & Davies, 1982; Smith,
Kassin, & Ellsworth, 1989; Wells, Ferguson, & Lindsay, 1981; Wells &
Leippe, 1981; Wells, Lindsay, & Ferguson, 1979; Yuille & McEwan, 1985).
Hence, some experts might argue that we should not recommend asking eyewit­nesses about their certainty of identification because it has proven to
be a misleading index of accuracy.

Nevertheless, we recommend that a confidence statement be secured from
the eyewitness for two reasons. First, the empirical literature indicates that
an eyewitness’s statement of confidence immediately following an identifi­
cation can have some diagnostic value, albeit perhaps to a trivial degree. Later,
however, an eyewitness is likely to have his or her confidence influenced
by extramemorial factors, thereby confusing the issue of how to interpret
later statements of confidence. Second, triers of fact are going to use eye­
witness confidence to infer something about the accuracy of the eyewitness
regardless of whether the confidence statement is taken immediately following
the identification or at some later time. Hence, we suggest that a confidence
statement be taken at the time of identification so that whatever confidence
level the eyewitness expresses is relatively clean of the extraneous influences
that can occur later.

In another chapter in this volume (Luus and Wells), the issue of the relation
between confidence and accuracy is discussed in greater detail. The general
point is that there are numerous, relatively uncontrollable events that can
occur subsequent to an eyewitness’s identification that serve to confound later
statements about how confident he or she is in the identification. For example,
if the eyewitness mentally rehearses the image of the identified person and
is motivated to resist being influenced by cross examination, his or her ap­
parent confidence on the witness stand might increase dramatically even if
the identification is incorrect (Wells, Ferguson, & Lindsay, 1981). An eye­
witness’s confidence in a false identification has been shown to increase dra­
Lineup identification tasks

matically by telling him or her that another eyewitness has identified the same person (Luus & Wells, 1992). Similarly one can imagine the difficulty an eyewitness might have if, following an identification, he or she is told that the identified person’s fingerprints were found at the scene of the crime. If the eyewitness were not asked until after receiving this extramemorial information how confident he or she is in his or her identification, can the external information be ignored? What does it mean if the eyewitness now says he or she is highly confident in the identification?

Recommendation 9 follows generally from Proposition II, which states that eyewitness responses can be influenced by extramemorial factors. Although we commonly think about the ways extramemorial factors might influence the identification decision, we must also be concerned with the ways in which extramemorial factors can influence postidentification judgments such as eyewitness confidence.

For these reasons we recommend that any identification decision be followed almost immediately with a question about how confident the witness is in that identification. Under no circumstances would it be appropriate to express pleasure or displeasure to the eyewitness, or “inform” the eyewitness in any way until the confidence statement is secured. Some might argue that it is unrealistic to assume that a lineup administrator can avoid responding nonverbally with pleasure or displeasure following an eyewitness’s identification decision. We do not need to presuppose some kind of superhuman quality of a lineup administrator (who is somehow immune to nonverbal leakage), however, as long as Recommendation 6 is followed. Recall that Recommendation 6 states that the lineup administrator should not be aware of which lineup member is the suspect and which are distractors.

Recommendation 10: All phases and aspects of the lineup should be meticulously recorded, preferably using videotape. The common practice of merely having a photograph of the lineup (or a copy of the photo spread), with some notes and forms filled out by the lineup administrator, should no longer be considered an acceptable record. These notes are almost always incomplete and there is considerable doubt at times about how such things as oral instructions to eyewitnesses were delivered as later reported in the police officer’s notes.

Given the pervasive accessibility and ease of operation of video recording equipment today, there seems little excuse for not videotaping the instructions that were given to the eyewitness, the lineup, the questions asked of the eyewitness, the eyewitness’s identification response, and the eyewitness’s statement of confidence. Ultimately, it will be up to the courts to decide whether or not a copy of such tapes should be given routinely to defense
counsel or whether this should happen only on a case by case basis by petition and argument from defense counsel. There can be no doubt, however, of the potential utility of videotaping lineup procedures.

Acceptable variations in lineup methods

The standard lineup procedure is one in which a suspect is embedded among distractors and the entire set of lineup members is presented at one time to the eyewitness. In recent years, variations on this method have been tested empirically. Wells (1984), for example, proposed a dual lineup procedure in which one lineup contains the suspect and the other does not. Wells argued that the dual lineup procedure is psychologically different from a larger lineup that simply joins these two separate lineups. This is especially true when the eyewitness is unaware that there will be two lineups. Under these conditions, any propensities of eyewitnesses to make an identification based on relative judgments (who looks most like the culprit relative to the other lineup members) will be detected because all members of the first lineup are innocent distractors. The empirical data show that this procedure, called the blank-lineup control, is an effective “lure” or “screen” for weeding out unreliable eyewitnesses.

We endorse the blank-lineup control procedure, but we hesitate to make it one of our explicit recommendations for two reasons. First, it may be unduly costly for police to construct two lineups for each eyewitness. Second, widespread practice of the blank-lineup control procedure could result in the practice becoming known to the general population. We could imagine, for instance, eyewitnesses always skipping over the first lineup because they have somehow learned that the suspect always appears in the second lineup.

Another variation on standard lineup procedures is the sequential lineup, proposed originally by Lindsay & Wells (1985). The sequential lineup presents one lineup member at a time and the eyewitness is asked to make a decision (is this person the culprit?) of yes or no for each person viewed at the time of initial presentation. The theoretical idea behind the sequential procedure stems from Wells’s (1984) relative-judgment conceptualization. Specifically, it is argued that the eyewitness who is confronted with the sequential lineup task cannot fall back on mere relative judgments because the set of possible relative comparisons is incomplete. The eyewitness might be able to say that a given person (for example, number three in the sequence) is a relatively better likeness than were the ones previously viewed, but he or she cannot be certain that a yet-to-be-viewed lineup member is not perhaps an even better likeness relative to the one being viewed now. Hence, by forcing the eyewitness to make a yes or no decision for each lineup member without knowing what the remaining members look like, the eyewitness is forced away
from relative judgments and made to rely more on an absolute comparison between the lineup member being viewed at the time and his or her memory of the culprit.

There is considerable consistent empirical support for the superiority of the sequential method over the simultaneous method (for example, Cutler & Penrod, 1988; Lindsay et al., in press; Lindsay et al., 1991; Lindsay & Wells, 1985; Parker & Ryan, 1990; Sporer, 1990). Nevertheless, we are not yet prepared to recommend that all lineups be conducted sequentially. Although we anticipate that the sequential procedure will be widely advocated by eyewitness experts within the decade, we worry that police departments that do not or cannot implement Recommendation 6 (lineup administrator kept blind as to which person is the suspect) might create more problems with the sequential procedure than they would with the simultaneous procedure. Our fear is that a lineup administrator might more effectively "communicate" (either intentionally or unintentionally) the identity of the suspect to the eyewitness with the sequential procedure than with the simultaneous procedure. In general, we endorse the sequential lineup whenever the lineup administrator can be kept blind as to which lineup member is the suspect; but if it is impractical, or if it is questionable whether the lineup administrator is truly blind in this regard, we believe that a simultaneous procedure may be safer.

Conclusions

We have argued that eyewitness error is a joint product of inherent human cognitive limitations and the methods that are used to obtain information from eyewitnesses. We now have a number of relatively specific recommendations about the best ways to conduct lineup identification tasks so as to minimize the rate of false identifications and maximize rates of accurate identification. We have tried to show how the principal recommendations we made in this chapter can be tied back to two simple, overreaching propositions: A lineup is conducted for the purpose of obtaining information with a recognition task that was not available using a recall task; the identification process is governed not only by memorial processes but also by extramemorial factors. Recommendations 1 through 9, each of which has empirical support, can be said to derive from one or both of these general propositions. We believe that there are other important recommendations that can be derived from these propositions and tested empirically; we trust these recommendations will be refined and new ones added in the next few years. Meanwhile, it seems that we have a practical body of research that can help reduce what we believe to be a significant problem in police practice.
Notes
1 We use the term lineup here to refer to live presentations of suspects and distractors as well as photographic spreads and videotaped methods of presentation.
2 See Wells & Luus (1990) for a more detailed treatment of the analogy.
3 Police sometimes call distractors "fillers." In the eyewitness literature they are sometimes called foils.
4 The actual odds are higher assuming there is some probability that the culprit is not in the lineup at all.
5 The actual odds are lower assuming there is some probability that the suspect is in fact the culprit.

References


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Edited by

DAVID FRANK ROSS
J. DON READ
MICHAEL P. TOGLIA