

Eyewitness Identification and the Selection of Distracters for Lineups*

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Previous treatments of eyewitness lineups have focused exclusively on the importance of homogeneity (similarity of common features) in the physical characteristics of lineup members. This has led to some confusion about the proper way to select distracters. We argue that distracters should not be selected for their similarity to the suspect but rather for their similarity to the witness's description of the culprit. The similarity-to-suspect strategy fails to define limits to the number, type, and degree of featural matching and falls prey to the logical extension that a good lineup is composed of the suspect's clones. Accordingly, the similarity-to-suspect strategy has no supportive logic in recognition memory theory and gives no credit to the importance of hit rates. The similarity-to-witness's-description-of-culprit criterion, on the other hand, specifies a finite and manageable set of feature requirements for distracters, articulates a role for heterogeneous features, meets all functional requirements for fairness to the suspect, has a supportive logic in recognition memory theory, preserves hit rates, and is not subject to the clone argument.

Consider the following statement: A good lineup is one in which the distracters viewed by the eyewitness are similar in all major physical characteristics to the suspect. Or, consider a parallel statement: A lineup is biased or improperly constructed if the suspect has physical features that are not also present in the appearance of the nonsuspect distracters in the lineup. We believe that most psychologists, and even some eyewitness experts, would say that these statements are true. We argue that these statements are misleading at best and false under certain circumstances.

In this article we distinguish between two strategies in selecting distracters

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for lineups. The distinction that we make is useful in a variety of ways. First, the distinction allows us to articulate the basic theory behind the conductance of lineups, what lineups should be designed to do, and what kind of information we are getting from lineups. Second, the distinction that we make is critical to the practice of evaluating the quality and fairness of lineups. As well, there are some important spinoffs of our discussion that can help focus the theory and practice of lineup construction toward a concern for maximizing hit rates rather than just minimizing false identification rates.

The distinction that we make is between a strategy of selecting distracters who resemble the suspect and selecting distracters who resemble the eyewitness's description of the culprit. We will call these two strategies the *similarity-to-suspect strategy* and the *match-to-description-of-culprit strategy*. The importance of the distinction between these two strategies will become apparent at both a theoretical level and a practical level. We believe that these two strategies frequently are confused by police and by psychologists. Previous writings have not specifically addressed the distinction.

Before we elaborate on the similarity-to-suspect strategy versus match-to-description strategy distinction, we describe four functions of distracters. These functions have been discussed in the literature on lineups, but their relations have been largely unspecified. An analysis of the assumptions underlying these functions helps articulate some important features of the distinction between the similarity-to-suspect strategy and the match-to-description strategy for selecting distracters.

The Function of Distracters

A distracter (or "foil") in a lineup is a known-innocent member of the lineup. Unlike the suspect, who is also a member of the lineup, if the distracter is named (identified) by the eyewitness as being the culprit, it is not considered to be incriminating of the distracter. Instead, it is considered to be an error by the eyewitness. Thus, it is false to claim that one can never know in an actual lineup (versus a staged-crime experiment) whether or not an eyewitness's identification is in error. Whenever an actual lineup includes distracters, the possibility exists for the eyewitness to identify the distracter and thereby reveal to the police investigators that the witness's recognition memory is fallible.¹ Thus, one of the functions of distracters is that they allow responses by eyewitnesses that can be known errors in actual cases. No other response by an eyewitness viewing an actual lineup can be classified with certainty into the category of an accurate or inaccurate response.

A related function of distracters is that they help control for chance. If an eyewitness were merely guessing, for example, the chances of identifying the

¹ An exception exists when police use an all-suspect (no distracters) lineup. Wells and Turtle (1986) report that all-suspect lineups are sometimes used in police investigations even though a mathematical analysis of the all-suspect lineup versus the single-suspect lineup clearly illustrates the loss of diagnostic power that exists when true distracters are not used.

suspect are $1/N$, where N is the number of people in the lineup. Implicit or explicit pressures on the eyewitness to choose someone from the lineup are difficult to eliminate completely, and distracters thereby help serve as a statistical control. Notice, however, that this helps control for chance only if we are using true distracters (i.e., known to be innocent of the offense) as the other members of the lineup. If all of the members of the lineup are suspects in the case, then there is no control for guessing.

A third function of distracters is to help assure that the eyewitness cannot use deductive reasoning to readily determine which member of the lineup is suspected by police. Suppose, for example, the witness had told police that the culprit was over 6 feet tall and yet all of the distracters are obviously under 6 feet tall whereas the suspect is over 6 feet tall. The eyewitness can now readily deduce that the police must suspect the lineup member who is over 6 feet tall. This function does not depend on the distracters being known-innocent foils. That is, an all-suspect lineup (see Wells & Turtle, 1986) could serve this function as well as a lineup that included only one suspect embedded among distracters. This function does, however, depend on the quality of the distracters. The idea here is that a lineup should be a test of the witness's memory, not a test of the witness's deductive reasoning. This is analogous to the rules governing a properly designed or conducted experiment wherein the experimenter's hypothesis should not be revealed to the research subject prior to collecting data from the subject (Wells & Luus, 1990).

This third function has been discussed in a variety of ways. It is here that the concept of suggestion has been used by researchers to explain why the distracters must be selected carefully so that the structure of the lineup itself does not suggest to the witness which person the police want the witness to identify (see Ellison & Buckhout, 1981; Malpass & Devine, 1984). Concepts such as the "cooperative witness" and related social psychological ideas can be brought into play at this point to help make it clear why a lineup must be structured so that it is not apparent whom the police suspect. Legal scholars have been sensitive to this function of distracters, and it is the concept of suggestiveness that legal scholars have invoked in condemning the practice of using show-ups, in which there are no distracters and the suspect alone is presented to the witness for identification (Sobel & Pridgen, 1981). This third function is also closely related to functional size (Wells, Leippe, & Ostrom, 1979), effective size, and defendant bias (Malpass & Devine, 1983). Functional size, effective size, and defendant bias are measures that are designed to determine the extent to which the distracters are effective in forcing witnesses to use memory rather than deductive reasoning in their attempt to identify the suspect.

The fourth function of distracters is our primary focus. The fourth function of distracters is to help assure that *the lineup constitutes a test of recognition memory rather than a test of recall*. This function is related to the third function but it carries a separate status that helps us to define more precisely what constitutes a good distracter. Importantly, the fourth function is the one that allows specification of factors that can help preserve or even enhance hit rates rather than merely deal with problems of false identification. We devote the next section to this general idea and its importance.

Recognition versus Recall in Lineups

A memory *recall* task is one in which the person is given a context (e.g., on the day of May 23 at Miller's Drug Store) and is asked to report from memory what was observed. In effect, the person must try to reproduce stimulus information (usually via verbal labels) in the absence of the stimulus. A *recognition* memory task, on the other hand, presents the person with a stimulus or stimuli and requires the person to report whether or not the stimulus was previously encountered in a particular context.

Prior to being shown a lineup, an eyewitness engages in a recall task by describing the perpetrator to the police. These prelineup descriptions are useful for helping to narrow the field of suspects and sometimes can be highly diagnostic of the actual identity of the perpetrator. It should be noted that, under conditions where a variety of witnesses have viewed the perpetrator, variations in the quality and quantity of the descriptions have little relation to the subsequent likelihood of an accurate identification (Pigott & Brigham, 1985; Wells, 1985). Nevertheless, prelineup description tasks are useful for sorting witnesses who reveal that they did not see the perpetrator from those who reveal that they did see the perpetrator. The reason why a lineup is held after obtaining the description is to learn something *more* than what was obtained in the description. Typically, verbal descriptions of people are sufficient for eliminating large proportions of the general population but nevertheless remain general enough to include large numbers of people. For example, a description given by an eyewitness might be "a white male, about 6 feet tall, clean-shaven, dark hair, and normal build." At least 80% of the population might be eliminated by this description but large numbers of males remain consistent with the description.

When we decide to conduct a lineup with recall (prelineup description) information in hand, we are buying into the theory that the eyewitness has information in recognition memory that exceeds what was available in recall. Presumably, we have already established that we have a suspect who resembles the culprit at some level; we want information that goes beyond the level that we obtained from the recall task. That is, in effect, the logic of a lineup. Given that logic, which we believe to be rather uncontroversial in and of itself, a clear guideline emerges for selecting distracters to serve in lineups.

The Similarity-to-Suspect Strategy

We begin with consideration of the similarity-to-suspect strategy for selecting distracters. The similarity-to-suspect strategy involves an analysis of the physical characteristics of the suspect. The physical characteristics or features minimally would include sex, race, height, weight, and age. Distracters are chosen to match these characteristics. But problems immediately arise. For example, how closely do we match height, weight, and age given that the suspect has exact measures on these variables? More problematic yet is the question of where our analysis should stop. Should we also match distracters to the suspect on hair color, hair length, hair style, eye color, body build, roundness of eyes, bushiness of brows,

facial hair, angularity of nose, thickness of lips, extent of ear protrusion, condition of teeth, and so on?

An apparent anomaly begins to emerge when we consider that similarity between the distracters and the suspect is necessary for a proper lineup while also realizing that, if taken to its full extent, identification would become impossible as all lineup members would look alike (see Shepherd, Ellis, & Davis, 1982; Wells & Luus, 1990). We will call this the clone argument or the clone anomaly. Before we describe what we consider to be the answer to the clone argument, we discuss one obvious but ultimately unsatisfactory way to save the similarity-to-suspect strategy for selecting distracters.

One way to handle the clone argument without rejecting the similarity-to-suspect strategy is to posit an *optimal-similarity function*. The idea is simply that there exists an optimal level of similarity between distracters and the suspect, below which the witness can easily deduce whom the police suspect of the offense (violation of the third function of distracters) and above which the task of discrimination becomes perceptually too difficult. Figure 1 depicts this theoretical

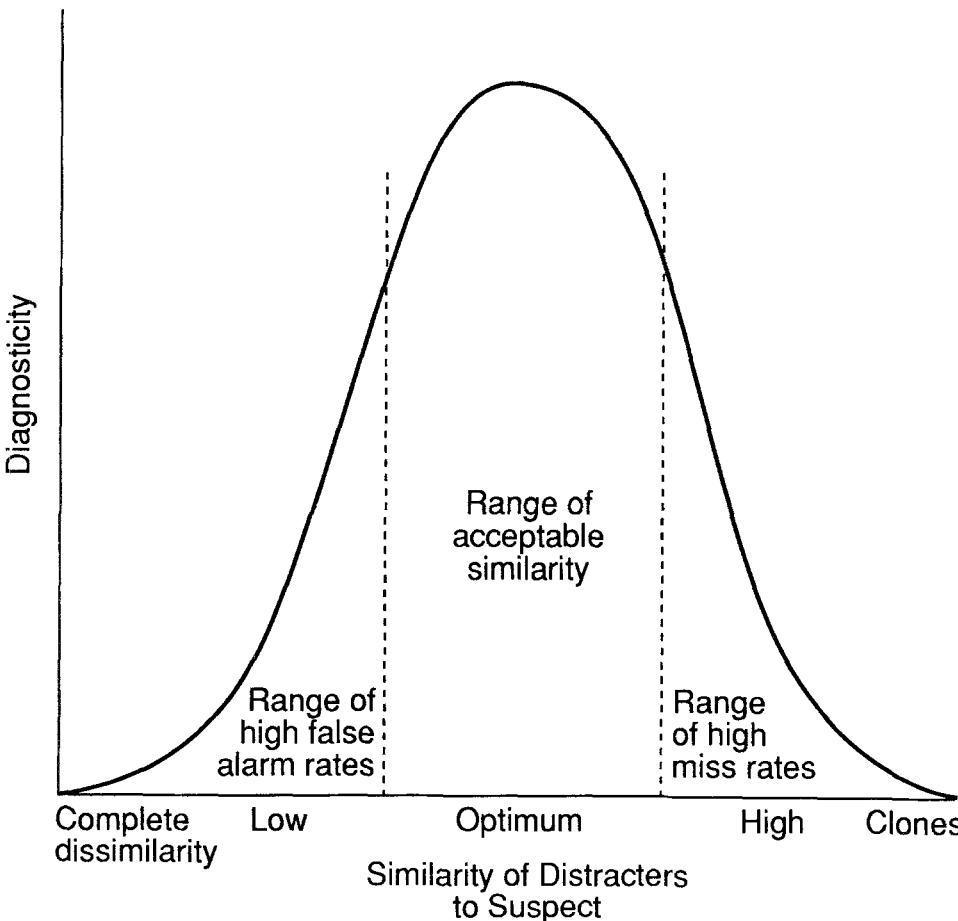


Fig. 1. An optimal-similarity function.

curve. Three sections or ranges are labeled on the curve. At the low end of similarity, the diagnosticity (see Wells & Lindsay, 1980) of the lineup is low because the risk of false identification is high. Indeed, research shows that placement of an innocent suspect into a lineup in which the distracters are highly dissimilar to the suspect results in a high rate of false identifications (Lindsay & Wells, 1980). This is the classic notion of an unfair lineup (see Doob & Kirshenbaum, 1973; Malpass, 1981; Wells, Leippe, & Ostrom, 1979). The right-hand portion of Figure 1 characterizes the drop in diagnosticity attributable to making the task overly difficult. An eyewitness might have a rather good memory for the culprit, but how can the eyewitness distinguish between the culprit and his identical twin?

Figure 1 is appealing as an answer to the clone argument, but we believe that it is a poor answer for two reasons. First, it fails to serve as a practical framework for specifying at what point additional similarity is needed or when too much similarity has been achieved. Although there undoubtedly is some theoretical truth-value to the idea of optimal similarity, we still do not know whether to include such features as hair style, angularity of nose, thickness of lips, roundness of eyes, and so on. In short, the mere postulation of an optimal-similarity curve buys us little or nothing in the way of a practical approach to a given case.

The other reason that we believe the optimal-similarity answer should not be used to respond to the clone argument is that it reinforces the premise that the suspect's physical characteristics per se represent the critical set of features. In other words, it is the premise of the optimal-similarity argument to which we take exception. In the following section we replace the premise that the suspect's physical appearance is critical in selecting distracters with the premise that the witness's description of the culprit is the critical criterion for selecting distracters. The argument that distracters should be selected to match the witness's description of the culprit rather than selected to resemble the suspect is not without some problems in certain cases as we discuss later in the "Special Problems" section.

The Match-to-Witness's-Description-of-Culprit Strategy

The match-to-description strategy begins with an analysis of the eyewitness's description of the culprit.² Selection of distracters is then based on this description. At a theoretical level, this means that distracters are chosen according to their similarity to the culprit rather than their similarity to the suspect. Note, however, that the suspect also has been chosen, at least in part, according to his or her similarity to the culprit. That is, in general (exceptions noted later) the suspect matches the description of the culprit that was given previously by the eyewitness; otherwise that person would likely not be a suspect.

² It is especially important from this point on that the reader keep in mind the distinction between suspect and culprit. The culprit is the person originally encoded in the eyewitness's memory at the time of the criminal event. The suspect might or might not be the culprit. The witness's prelineup description is of the culprit who is not necessarily the suspect. The witness's identification is of the suspect who is not necessarily the culprit.

Notice the parallelism involved in determining lineup membership using the match-to-description strategy. The suspect's similarity to the description of the culprit is a major factor in his or her being a suspect, and this is the same criterion used for choosing distracters for membership in the lineup. But the heart of our argument favoring the match-to-description strategy over the similarity-to-suspect strategy does not rest with the mere aesthetic appeal of parallelism. Instead, it rests with the ability of the match-to-description strategy to (a) specify a priori the physical features that should be shared by all lineup members, (b) specify a priori the physical features that lineup members should *not* share, and (c) thereby help assure that an eyewitness both can and must use recognition memory to perform the task.

We begin with a hypothetical example to show how the two strategies for selecting distracters yield different distracters. Suppose an eyewitness to an armed robbery observed a culprit with the characteristics described in Table 1. We have arbitrarily restricted the number of features included in our list of the culprit's characteristics.

Indeed, we could easily list 30 or perhaps even 100 or more observable physical characteristics of the culprit. But this list suffices for our purposes. Now consider the eyewitness's description of the culprit as presented in Table 1. Here, only 6 features are listed. Unlike the culprit's actual characteristics, there is a natural limit to the list length of the description, namely, wherever the eyewitness stopped in his or her free recall of characteristics. There are perhaps several reasons why verbal descriptions of people are both incomplete and inexact; among the reasons are that there is not a rich, precise language for describing faces and because faces tend to be perceived holistically rather than featurally (e.g., Wells & Turtle, 1988). In any case, an eyewitness's description of a culprit constitutes a finite list of features. Note, on the other hand, that the suspect's characteristics, regardless of whether the suspect is or is not the culprit, has no natural limit to the list of features, and list length had to be set arbitrarily in Table

Table 1. Hypothetical Features of a Culprit, an Innocent Suspect, and an Eyewitness's Description of the Culprit

Category	Features list	Notes
Culprit's characteristics	Male, white, 34 yr, 6'1", brown hair, angular nose, thin lips, 187 lb, no facial hair	Features list is nearly unlimited. Limits to list length set arbitrarily here.
Eyewitness's description of culprit	Male, white, 30-35 yr, 6'-6'5", dark hair, average build, no facial hair.	Features list is naturally limited by what the eyewitness can freely recall.
Suspect's characteristics		
1. Given that suspect is culprit	(Same as culprit's characteristics)	(Same note about list length as above for culprit's characteristics)
2. Given that suspect is not culprit	Male, white, 32 yr, 6'3", black hair, rounded nose, thick lips, 195 lb, no facial hair.	Features list is nearly unlimited. Limits to feature list length are set arbitrarily here.

1. Finally, note that we have described the situation where the suspect is not the culprit in a way that is consistent with (or does not violate) the eyewitness's description (otherwise he would not likely be a suspect) but is not identical to the culprit's characteristics (because he is not the culprit).

Now we are prepared to consider the concrete application of our two strategies for selecting distracters. For each strategy, we must consider both possible states of truth, namely, that the suspect we have placed in the lineup is the culprit and that the suspect we have placed in the lineup is not the culprit. Table 2 describes the four hypothetical situations resulting from the joint consideration of the two states of truth (suspect is or is not the culprit) and the two strategies for selecting distracters (the similarity-to-suspect strategy and the match-to-description strategy). Notice first that when the suspect is *not* the culprit, the two strategies for selecting distracters are not considered to yield different outcomes. (Of course, if we used a strategy in which the distracters were similar to *neither* the description of the culprit nor the suspect, false identification of the suspect would be more likely to occur because the suspect would be the only one

Table 2. Characteristics of Distracters Who Are Selected According to the Two Strategies and Possible Consequences of Each Strategy

	Characteristics of distracters	Possible consequences
<i>Suspect is culprit</i>		
Similarity-to-suspect strategy for selecting distracters	All distracters are white males with brown hair, angular nose, thin lips, and as close as possible to 34 yr, 6'1", 187 lb	Witness cannot discriminate. Recognizes features that could not be recalled previously, especially the thin lips and brown hair, but this yields no preference because these features exist in all lineup members. <i>Result:</i> Incorrect rejection (miss).
Similarity-to-witness's description of culprit strategy for selecting distracters	All distracters are white males of average build. Heights vary from 6' to 6'5", noses vary in roundness and angularity, hair varies over all dark shades from brown to black, lips vary from thin to thick, etc.	Witness recognizes the thin lips and brown hair even though these features could not be freely recalled without the stimulus present. The angular nose serves as a further aid to recognition and the witness (correctly) identifies the suspect. <i>Result:</i> Positive accurate ID (hit).
<i>Suspect is not culprit</i>		
Similarity-to-suspect strategy for selecting distracters	All distracters are white males with black hair, rounded nose, thick lips, and as close as possible to 32 yr, 6'3", and 195 lb	Witness has no preference or indicates that none clearly looks like the culprit. <i>Result:</i> Correct rejection.
Similarity-to-witness's description of culprit strategy for selecting distracters	(Same as similarity-to-witness's-description strategy when suspect is culprit)	Witness has no preference or indicates that none clearly looks like the culprit. <i>Result:</i> Correct rejection.

who matched the description that the witness gave to the police, and the witness could deduce the answer that the police must be seeking.) In other words, the similarity-to-suspect strategy is not distinguishable from the match-to-description strategy when the suspect is not the culprit and therefore each strategy protects an innocent suspect equally well.

The difference between the two strategies for selecting distracters surfaces clearly when we consider situations in which the suspect is the culprit. In our example as described in Table 2, the use of distracters who resemble the suspect serves only to delete or cancel reliable cues to recognition. The result is a reduction in hit rates (i.e., an increase in misses) compared to the alternative strategy of selecting distracters who are similar to the witness's description of the culprit.

Common and Variable Features

The key to a proper selection of distracters requires a joint consideration of which features of the lineup members should be common (i.e., shared among all) and which should be variable (not shared among all lineup members). Previous treatments of the strategy for constructing fair lineups, namely, functional and effective size, have focused only on the issue of commonality. It is true that the concepts of functional size (Wells, Leippe, & Ostrom, 1979) and effective size (Malpass, 1981) imply that distracters should be selected so as to match the witness's description in that both of these measures are based on similarity between the distracters and the description rather than similarity between the distracters and the suspect. In this sense our preference for the match-to-description strategy is consistent with the suppositions underlying functional and effective size. However, functional and effective size measures are indifferent to the question of how the functional or effective size is achieved. For example, a functional size or effective size of 5.0 can be achieved by selecting four distracters who match the witness's description while varying on other characteristics or that same functional size can be achieved by selecting the quintuplet brothers of the suspect. Although these two lineups are profoundly different, they nevertheless will have the same functional size. This is because functional size and effective size are measures of a lineup's ability to protect the suspect who is innocent but are not measures of a lineup's ability to secure a positive identification of the culprit.

The match-to-description of culprit strategy for selecting distracters allows us to specify a priori which features of the distracters should be similar (common) to the suspect and, importantly, which should be distinctive (variable). Distinctive features are critical for successful recognition memory (Gibson, 1969). We believe that the importance of variation has been ignored in previous writings on the construction of lineups in large part because previous writings have concerned themselves almost exclusively with the issue of how to reduce the likelihood of false identifications. Clearly, false identifications can be minimized by increasing the similarity (reducing the variance) between the distracters and suspect. Unfortunately, such a strategy fails to specify at what point the reduction of variance should be stopped; as a result, we end up with the anomaly of the clones and theoretical muddle inherent in Figure 1. The match-to-description strategy, how-

ever, specifies a point at which to stop achieving commonality among features (i.e., when the description is matched) and when to allow variation to exist.

The Recognition-Memory Function of Lineups

We return now to the earlier discussion regarding the theory and function of lineups, this time relating it to the two strategies for selecting distracters. We can conceptualize a lineup task as a test or experiment that is designed to provide new information regarding the likelihood that the suspect is the culprit, that is, information that we did not have prior to conducting the lineup. Equivalently, we could characterize the lineup task as something that could reduce uncertainty about the likelihood that the suspect is the culprit. Whether we conceptualize the lineup test as one of information acquisition or uncertainty reduction, we must take consideration of what we did or did not know prior to conducting the lineup regarding the likelihood that the suspect is the culprit. One of the sources of information that we had prior to conducting the lineup is the eyewitness's description of the culprit. Clearly, we do not want the eyewitness to identify our suspect from the lineup merely on the basis that the suspect matches the description previously given by the eyewitness. If this happened, we could claim no decrease in uncertainty (or gain of information) beyond what we already knew prior to conducting the lineup. Indeed, this is the principal reason why the distracters should match the witness's prior description; if they do not, then we cannot be certain whether the eyewitness is now drawing on recognition memory.

If the distracters do match the eyewitness's prior description of the culprit, then we should be satisfied that the eyewitness's ability to identify the suspect was based on recognition memory rather than recall. Of course, errors can still occur, but we should not be interested in eliminating reliable featural cues to recognition once we have controlled for features of recall. We believe that the similarity-to-suspect strategy serves no good purpose and in fact harms the opportunity to reduce uncertainty because it eliminates reliable featural cues to recognition well beyond the level of controlling for recall and only serves the purpose of making the identification a difficult task for the witness.

Returning to the clone argument, we see this argument as being applicable to the similarity-to-suspect criterion but it is not applicable to the match-to-description criterion. The description of the culprit that is given by the eyewitness is naturally limited to the set of features recalled by the eyewitness. The list of such features is finite, relatively general, and manageable. The point at which one should stop worrying about matching of physical features of distracters is demarcated clearly by the eyewitness's recall. After one controls for recall, there remains sufficient stimulus variation across lineup members for an eyewitness to make the appropriate discriminations as long as the witness has information in recognition memory that exceeds what was articulated in recall.

Special Problems

We believe that the direct application of the match-to-description strategy adequately handles over 90% of all lineup situations. The discerning reader, how-

ever, is probably able to conjure hypothetical situations where the match-to-description strategy becomes problematic. We see three types of situations where this could be the case. First, the match-to-description strategy presents a dilemma when the eyewitness's description of the culprit does not resemble the suspect. This can happen when the police have some other evidence against a suspect (e.g., possession of stolen goods) and believe that the witness simply made a mistake in recall. Of course, discrepancies between the witness's description of the culprit and features of the suspect might exist because the police have the wrong person, but such discrepancies might also be attributable to other factors such as postevent distortions from the witness overhearing a misleading description of the culprit (Loftus & Greene, 1980). Police commonly go ahead with the lineup on the assumption that the witness will recognize the person even though they could not describe the person accurately, an assumption that has some support in empirical data (Wells, 1985). In this case we would not endorse selecting distracters who match the description of the culprit because the suspect would be likely to stand out as the only one who does not match the description.

Consider a concrete example in which the witness describes the culprit as a white male, 21–25 years old, a protruding chin, dark hair, about 165 pounds, and 5'9" tall. Suppose further that the suspect has these characteristics except that his chin is actually somewhat receding and he is (as well as appears to be) 32 years old. Here, we call for a joint strategy. In this case, distracters should be white males, around 32 years old in appearance with slightly receding chins and dark hair, around 165 pounds, and around 5'9" tall. It is important to note that we have not abandoned our overall strategy. Specifically, we have not advocated matching distracters to all characteristics of the suspect. The joint strategy that we advocate continues to consider *only those features that were mentioned in the description*. If the suspect had rounded eyes and bushy brows, for example, we would not and should not go out of our way to select distracters who have such features because neither brows nor eyes were part of the eyewitness's descriptive recall. In other words, our joint strategy is guided by the *conjunction* of previously recalled features of the culprit and features of the suspect; other features of the suspect are not considered in selecting distracters.

The second type of problem that can arise is when the description of the culprit that was given by the eyewitness is so detailed and/or idiosyncratic that one could not possibly locate a sufficient set of distracters. Suppose, for example, the eyewitness described the culprit as a white, 32-year-old male of average height who had a 2-inch horizontal scar under his left eye and a tattoo on his right hand that said "Melanie loves me." Before we suggest the two main solutions to this special case problem, it is important to point out that this problem is not unique to the match-to-description criterion. This same problem would exist for the similarity-to-suspect strategy as well. If such a problem arises, we suggest two possible solutions. First, although we cannot find distracters with these scar and tattoo characteristics, we could either create these characteristics artistically on the other lineup members, or obscure these features with tape on the same spots for all lineup members. Alternatively, we suggest that police forego the conductance of a lineup altogether because, if they had a suspect with these precise

characteristics, identity seems well established already. Again, it must be remembered that the lineup is conducted so that we can further reduce our uncertainty regarding the prospect that the suspect is the culprit. If we have already reduced our uncertainty to zero via the eyewitness's prelineup description, what further function could the conductance of the lineup serve?

A third type of problem arises when there is more than one eyewitness and each eyewitness provides a somewhat different description. Here, we recommend that separate lineups be constructed for each witness. This might seem extreme on first consideration, especially given the cost, time, and effort involved. However, there are strong reasons for using different lineups for each witness regardless of which strategy is used to select distracters. In a handbook devoted to guidelines for using eyewitnesses to establish identity, Wells (1988) noted problems inherent in showing multiple eyewitnesses the same lineup. Generally, any bias in the structure of a lineup, either toward or away from the suspect, will replicate itself across eyewitnesses. Agreement among eyewitnesses in a multiple-witness case is more impressive if we can rule out correlated error that might be attributable to the use of the same lineup structure for each witness. Thus, although we readily acknowledge that in cases where multiple witnesses given different descriptions the match-to-description criterion is more expensive and time consuming than the similarity-to-suspect strategy, we argue that multiple lineups should be used when there are multiple witnesses regardless of which strategy is used to select distracters.

Finally, some critics might argue that lineups structured according to our recommendations will have some difficulty standing up to courtroom scrutiny. In particular, the witness-description-of-culprit criterion allows for considerable variation to exist across lineup members. Suppose, for example, no witness could describe anything about the culprit's ears, chin, or brows. Suppose further that the suspect happens to have protruding ears. Because ears were not part of the description, the suspect could be the only one with protruding ears and this *seems* like a biased lineup. There are two responses to this charge. First, it is biased only if the suspect stands out as distinct among the set. Recall, however, that we have not abandoned the idea that the suspect should not stand out as distinct. If the ears cause distinctiveness, then this must be corrected. But this is highly unlikely to happen because *each distracter undoubtedly will have some unique features that, if isolated for analysis, makes the distracter stand out*. For example, the suspect might be the only one with protruding ears, but distracter number 2 is the only one with bushy brows, distracter number 3 is the only one with wavy hair, distracter number 4 is the only one with a dimpled chin, distracter number 5 is the only one with brows that have a different color than the hair on his head, and so on. Prosecutors should have no difficulty making this argument. And the jury should have no difficulty realizing that, if the suspect was not the culprit, the eyewitnesses should no more be influenced by the suspect's protruding ears than by the bushy brows, wavy hair, or dimpled chin of the alternative distracters.

We fully acknowledge that after equating lineup members for their match to the witness's description of the culprit and making certain that the suspect does not stand out as unique, there will remain considerable variance across lineup

members. Indeed, that is the main point of this article; variation across a stimulus set is required in order for recognition memory to operate and this variation should be restricted to stimulus features that were not recallable by the subject. If these conditions are met and yet judges or juries continue to see the lineup as biased, it is because they are confusing the similarity-to-suspect concept with the similarity-to-witness's-description-of-culprit concept. If this is the case, then we have an interesting problem on our hands, but it does not negate our arguments regarding the proper strategy for selecting distracters.

One question that needs to be answered empirically concerns the impact of the similarity-to-suspect strategy on rates of identification of distracters versus nonidentifications. Specifically, when the distracters are selected to be highly similar to the suspect in a culprit-present condition, reductions in hit rates must surface in either an increase in rates of selecting distracters or an increase in rates of nonidentification or both. This could be tested by constructing lineups for subject-witnesses using both strategies and comparing rates of nonidentification and distracter identification. Although we clearly expect hit rates to be greater with the match-to-description strategy than with the similarity-to-suspect strategy, it is not clear what to expect in terms of differences between these strategies on rates of nonidentifications and distracter identifications.

It would also be useful to test for possible effects of these two strategies on the certainty-accuracy relation. According to Deffenbacher (1980), the correlation between eyewitness identification accuracy and eyewitness certainty is greater when accuracy is high than when accuracy is low. This suggests that the match-to-description strategy will produce a stronger accuracy-certainty correlation than will the similarity-to-suspect strategy.

SUMMARY AND CONCLUSIONS

Two strategies for selecting distracters for lineups were described. We argued that the similarity-to-suspect strategy, in which the distracters are selected to match characteristics of the suspect, is ill conceived and is without a theoretical rationale. The similarity-to-suspect strategy fails to specify a natural point at which to stop the matching of physical characteristics and falls into the criticism of the clone argument. As well, the similarity-to-suspect strategy fails at a theoretical level to allow a role for variance among lineup members, even though variance (distinctive features) is necessary for the cognitive operations involved in successful recognition (Gibson, 1969).

The similarity-to-description strategy, in which the distracters are selected to match characteristics of the eyewitness's description of the culprit, is clearly preferred. We argued that a lineup should involve both common or shared physical features among lineup members and variations in features. Common features should be those that are part of the eyewitness's recall (prelineup description of the culprit), whereas the remaining (nonrecalled) features should be variant over lineup members. This strategy allows us to specify the number and type of fea-

tures that a valid distracter should have, namely, those features that the witness recalls about the culprit. The ability of the witness to identify the suspect among lineup members who are matched with regard to the witness's prior recall of the culprit should reflect the recognition component of memory.

Advocacy by eyewitness experts of the description-of-culprit criterion rather than the similarity-to-suspect criterion can help establish acceptability of our recommendations by police because it spells out how to make use of our recommendations for protection of innocent suspects and yet continue to maintain reasonable rates of positive identification. A clearer articulation of the description-of-culprit strategy rather than the similarity-to-suspect strategy in our research writings should help clarify what we mean when we express concerns about the adequacy of distracters in lineups.

We do not wish to leave the impression that the structural features of lineups can be arranged in such a way as to totally eliminate errors. Cognitive limitations will always include the risk of false identification and incorrect rejection, but our concern here is with that portion of error that is attributable to the structural characteristics of lineups and with the practical dispensation of advice that can reduce such errors.

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