**The author(s) shown below used Federal funds provided by the U.S. Department of Justice and prepared the following final report:**

**Document Title:** **Double-Blind Sequential Police Lineup Procedures: Toward an Integrated Laboratory & Field Practice Perspective**

**Author(s):** **Nancy K. Steblay**

**Document No.:** **246939**

**Date Received:** **May 2014**

**Award Number:** **2004-IJ-CX-0044**

**This report has not been published by the U.S. Department of Justice. To provide better customer service, NCJRS has made this Federally-funded grant report available electronically.**

**Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.**

# Double-Blind Sequential Police Lineup Procedures:

# Toward an Integrated Laboratory & Field Practice Perspective

Final Report

Grant # 2004-IJ-CX-0044

March 31, 2007

Nancy K. Steblay

Augsburg College

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

## Abstract

The project purpose was to join behavioral data from scientific research, current field experience, and new laboratory investigation to advance knowledge of best police lineup practice for law enforcement and research communities. The project was a collaborative effort between the Hennepin County (Minnesota) Attorney's Office and the PI's research laboratory. Three data collection and analysis components were completed: (1) Hennepin County's pilot implementation of double-blind sequential lineup procedures, including 280 field lineups; (2) a laboratory evaluation of the quality of the Hennepin County lineups; and (3) an experimental laboratory test of how revisions to prescribed lineup protocol affect eyewitness lineup decisions.

The Hennepin County (HC) results indicate a successful application of double-blind sequential lineups to street investigations. Double-blind sequential lineups are now established county-wide, providing a standardized scientifically-based lineup procedure that has been demonstrated to be practicable in real cases.

HC field data and laboratory test data converged to demonstrate increased misidentifications when a witness is allowed to view the lineup more than once. The lab study also revealed how reduced lineup size—attrition due to the witness's recognition of fillers—can negatively affect eyewitness identification accuracy.

Completed grant objectives included: (1) Descriptive data providing the first available baseline measure for blind sequential field lineup practice; (2) Summary of the field lineup implementation process; (3) A laboratory test of the impact on eyewitness decisions of an opportunity for repeated viewing of the sequential lineup (4) A laboratory test of the effect on eyewitness decisions of a reduction in lineup size through witness


This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

familiarity with fillers; (5) Integration of laboratory and field data to generate practical, empirical, and theoretical knowledge of effective lineup procedure; and (6) Practical and scholarly presentations and publications as appropriate to law enforcement professionals, the psycho-legal research community, and the NIJ Data Resource Program.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

# Blind/Sequential Police Lineup Procedures:

# Toward an Integrated Laboratory & Field Practice Perspective

The purpose of this project was to join data from past scientific eyewitness research, current field experience, and new laboratory investigation to advance knowledge of best police lineup practice for law enforcement and research communities. The project included two components: (1) a pilot program of double-blind sequential lineups in Hennepin County, Minnesota, and (2) a laboratory investigation of eyewitness memory under revised lineup procedures. These combined sources of data – field and laboratory – have generated valuable new information about successful field practice as well as scientifically sound answers to questions regarding the effects of specific changes to prescribed lineup protocol. Such knowledge can contribute enormously to policy reform efforts.

*Objectives*

The data generated by the Hennepin County (HC) pilot lineup program addressed two primary objectives: (1) collection and analysis of descriptive data detailing field lineup administration, situational context, and witness response, to form the first available scientific baseline measure for double-blind sequential lineup practice; and (2) a cohesive and instructive summary of the HC lineup implementation process. Two questions prompted the HC program and data analysis: Can double-blind sequential lineup procedures be effectively implemented in the field? Do the number and quality of identifications change with the blind-sequential procedure?

The laboratory objectives involved controlled testing of two specific deviations from prescribed lineup protocol: (3) to determine the impact on eyewitness lineup decisions of a witness's second (or third) viewing of a lineup in which the photos were presented

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

sequentially, and (4) to assess the impact on eyewitness decisions of a naturally-occurring reduction of lineup size due to a witness's familiarity with lineup foils. The collaboration between the County Attorney's Office and the research lab also facilitated the final project objective, (5) the integration of laboratory and field data to generate practical, empirical, and theoretical knowledge of effective lineup procedure, including identification of lessons as to how more effective lineup procedures can best be brought to practice.

*Brief rationale for the project*

Past scientific research has led to a cohesive lineup prototype that promises a significant improvement in eyewitness accuracy (Well, Small, Penrod, Malpass, Fulero, & Brimacombe, 1998). Advancement has been achieved through creative application of insightful theory and rigorous laboratory testing. One compelling feature of the research endeavor is the relative speed at which lab results have been usefully applied to police practice (Wells, Malpass, Lindsay, Fisher, Turtle, & Fulero, 2000). The laboratory research has resulted in guidelines for law enforcement aimed at preventing witness errors in police lineup identifications (Technical Working Group for Eyewitness Accuracy, 1999, hereinafter *The NIJ Guide*). The recommendations include refinements in both lineup structure and procedure. More recently, scientists have advised police to also incorporate double-blind administration and a sequential photo presentation format into their lineup procedures (Wells, et al., 2000). Versions of this newer protocol now are being introduced into practice in a number of jurisdictions; one such instance is a year-long lineup pilot project in Hennepin County, Minnesota.

As scientific research is translated to public policy, as is the case in Hennepin County, it is desirable to maintain a timely exchange of information among scientists, law

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

enforcement professionals, and legal practitioners. Law enforcement officials are in a good position to identify gaps in laboratory-generated knowledge, and laboratory researchers can use field research to inform their efforts to achieve desirable levels of authenticity and ecological validity in the lab (see e.g., Diamond, in press).

At the same time, field practice prompts questions that compel subsequent laboratory examination. Questions of interest usually center on practical issues, but hold implications for broader theoretical issues as well. Of particular relevance is the matter of how adjustments in police lineup procedure that meet convenience or practical needs of the local jurisdiction might compromise or enhance witness accuracy. With its randomized controlled trials, the laboratory offers the most objective means to address such questions.

*Legal rationale and review*

Eyewitness identification is persuasive evidence of criminal wrongdoing. On the witness stand a confident eyewitness is likely to deliver compelling testimony (Greene 1988; Rattner 1988). However memory is fallible, and even a well-intentioned and confident eyewitness may bring flawed recall to a police lineup and falsely incriminating evidence to court. Recognizing this problem, the United States Supreme Court in the 1960s began to put into place safeguards to protect criminal defendants from wrongful convictions through misidentification. For example, in *United States v. Wade* (1967) the Court held that the Sixth Amendment right to counsel applies to critical stages of pretrial proceedings including the physical lineup procedure. The Court recognized the "vagaries of eyewitness identification" and the "innumerable dangers and variable factors which might seriously, even crucially, derogate from a fair trial" (p. 218). The United States Supreme Court ruled in *Stovall v. Denno* (1967) that an unduly suggestive lineup

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

constitutes a due process violation if it could lead to an irreparably mistaken identification. Therefore a defendant could move to suppress prejudicial identification testimony depending on the "totality of the circumstances" surrounding the testimony (p.302). The next year, in *Simmons v. United States,* the Court ruled that each potential due process violation during a lineup must be examined on the facts of the individual case. Lineups would be excluded from trial if the "procedure was so impermissibly suggestive as to give rise to a very substantial likelihood of irreparable misidentification" (p. 384).

In the 1970s, however, the Court began retreating from the broader safeguards guaranteed in *Wade, Stovall* and *Simmons*. In *United States v. Ash* (1973) the Court refused to extend the protection of a Sixth Amendment right to counsel to photographic lineups, reasoning that a photo display did not involve such risk so as to require a safeguard. The Court also found that even extremely biased lineups were not *per se* exclusionary. Instead, it was necessary to determine whether an admittedly suggestive lineup was nonetheless reliable. In *Neil v. Biggers* (1972) the court considered five factors for determining the dependability of an eyewitness identification: the witness's opportunity to view the perpetrator during the crime, the witness's attention to the perpetrator at the time of the crime, the accuracy of the witness's initial description of the perpetrator, the witness's certainty at the lineup, and the length of time between the crime and the identification. In *Manson v. Brathwaite* (1977) the Court concluded, "reliability is the linchpin in determining the admissibility of identification testimony" (p. 114). This even more firmly emphasized that the important question was not whether the identification procedure was prejudicial to the criminal defendant, but whether the identification itself

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

was reliable. To varying degrees, these cases sought to remedy the effects of suggestive lineups, but did little to discourage use of prejudicial procedures.

The subsequent introduction of DNA testing allowed the exonerations of many wrongfully convicted individuals, to date numbering 183 (The Innocence Project), and drew substantial attention to eyewitness error as the major contributor to these unjust convictions (Wells et al., 1988). Investigators, attorneys, and testifying witnesses who have helped to prosecute a later-exonerated individual realize with extreme regret that even well-intentioned "by the book" procedures can end very badly. Along with the horrific effects on the lives of the violated innocent person and his or her loved ones, a wrongful conviction leaves the true perpetrator on the streets to commit additional offenses. The reality of wrongful conviction also has the potential to substantially erode public confidence in the justice system and citizens' sense of security.

As the Court considered eyewitness evidence problems, scientists over four decades developed and reported findings that shed light on the reasons for memory errors in the eyewitness experience (Wells, et al., 1998). Principles of human perception, memory, and social influence illuminated not only the causes of faulty memory but preventive measures to preclude eyewitness failure. Scientific recommendations about improved lineup structure and procedure provide one means to make it less likely that innocent suspects are prosecuted and more likely that true perpetrators are held responsible for their crimes.

DNA exonerations became the catalyst for lineup reform in some jurisdictions. For example, in the wake of the New Jersey *Cromedy* decision—an eyewitness evidence case in which a DNA test of biological evidence collected from the victim exonerated the defendant—Attorney General John Farmer turned to the lineup reforms recommended by

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

researchers (Doyle, 2005). Farmer approved new lineup procedures with safeguards exceeding those recommended by the National Institute of Justice. Using the unique authority granted the Attorney General in that state, Farmer implemented mandatory statewide guidelines, making New Jersey the first state to uniformly adopt double-blind sequential lineup procedures (State of New Jersey, 2002).

Other initiatives have been undertaken as well. In 2002, Governor Ryan's Commission on Capital Punishment, charged with ensuring the accuracy and justness of capital punishment in Illinois, recommended the implementation of eyewitness identification reforms (Report of the Governor's Commission on Capitol Punishment). The North Carolina Actual Innocence Commission created a series of recommendations in 2003 for state law enforcement officers, including a comprehensive lineup protocol. In early 2005, the Avery Task Force wrote model recommendations for the Wisconsin criminal justice system, recently affirmed by the State of Wisconsin Office of the Attorney General (2006). The Virginia General Assembly also instructed the Virginia State Crime Commission (2005) to create guidelines for improving lineup procedures in the commonwealth. Individual jurisdictions in a handful of states also have implemented improved procedures, Massachusetts, Virginia, Washington, Minnesota and California among them (see e.g, Northhampton Police Department, 2005; Police Chief's Association of Santa Clara County, 2002).

*Scientific rationale and review*

The U.S. Department of Justice published *Eyewitness Evidence: A Guide for Law Enforcement* in 1999. This document followed from concerns about unjust convictions revealed through DNA-exoneration cases, its recommendations based on the growing

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

collection of sound scientific laboratory research. In the majority of DNA-exoneration cases, mistaken eyewitnesses were the primary evidence leading to conviction (Wells, et al., 2000). The psychological research has shown that eyewitness reports are often unreliable and that unintentional police influence can exacerbate witness tendencies toward inaccurate lineup choices. The NIJ Guide is clear about remediation of this problem: The eyewitness should be given unbiased lineup instruction ("The perpetrator may or may not be in this lineup"), lineups should be constructed fairly (e.g., foils matched to perpetrator description and the perpetrator not standing out in the lineup), and officers should record results in a prescribed manner. Also included in the NIJ Guide is a recognition that "advances in social science and technology will, over time, affect procedures used to gather and preserve eyewitness evidence" (p. 8). Three examples were specified as areas for future exploration: the sequential method of lineup presentation; blind lineup administration procedure; and computer-based imaging systems to facilitate the use of improved procedures.

*Sequential method of lineup presentation.* A sequential lineup presentation attempts to remedy a troublesome aspect of the eyewitness decision-making process, *relative*—versus *absolute*—judgment (Wells, 1984). Standard police lineups present the eyewitness with all lineup members (e.g., six persons) at one time. Under this simultaneous format, eyewitnesses tend to compare lineup members to each other to determine which most closely resembles the offender in memory, a process of *relative judgment*. If the witness was able to encode a vivid memory of the perpetrator and this person is in the lineup (a *target-present* array), the likelihood of a positive and correct identification is increased. The concern, however, is whether the witness will recognize the absence of the offender when in fact the suspect is not the perpetrator. The DNA-exoneration cases – the majority

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

of which were instances in which the actual offender was not in the lineup -- illustrate exactly this problem: witness inability to correctly reject a *target-absent* lineup (The Innocence Project, 2006). The results of controlled experiments predict a negative outcome when police unknowingly place an innocent suspect in a lineup.

The impact of relative judgment when the offender is absent from the lineup was demonstrated convincingly by Wells (1993). Participant-witnesses to a staged crime were shown one of two versions of a lineup. When the perpetrator was present in a six-person lineup, 54% of the witnesses selected him. All witnesses had been given an unbiased instruction ("the perpetrator may or may not be in the lineup") and 21% opted not to choose from the lineup. Now, the key question: What will happen to the second group of witnesses who view the same lineup minus the perpetrator? If 54% of witnesses truly recognize the offender when he is present, this 54% -- who would have identified the offender had he been in the lineup -- should join the 21% who reject the lineup, producing a 75% "no-choice" response. What happened is quite different: Only 32% of the witnesses correctly rejected this target-absent lineup, only a small gain from the 21% expected in this response category. Sixty-eight percent of the witnesses chose from the lineup, most of the filler identifications falling on the photo that was the next-best match to the offender, placing this innocent suspect in jeopardy. This result has been dubbed the "target-to-foils shift" (Clark & Davey, 2005). Even in a perpetrator-absent lineup, it is likely that one lineup member will provide a better relative match to memory than the others, thereby drawing the attention of the eyewitness and increasing the risk of false identification.

To address this problem, the sequential procedure presents the eyewitness with one lineup member at a time and requires the witness to decide whether or not that person is the

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

perpetrator before moving to the next photo. The witness does not know how many photos will be shown, thereby decreasing the pressure to choose any one photo in the sequence. This one-at-a-time procedure is intended to discourage the eyewitness from simply deciding who most resembles the perpetrator, thus forcing a more absolute decision criterion.

The NIJ Guide only *suggested* the sequential method for practice, presumably because the available research in 1999 did not yet confirm the sequential lineup's benefit beyond the traditional simultaneous format. Since that time, a meta-analytic review has demonstrated reliable positive laboratory outcomes from use of a sequential procedure (Steblay, Dysart, Fulero, & Lindsay, 2001). Simultaneous versus sequential formats produce dramatically different choice and accuracy outcomes. Witnesses who view a simultaneous lineup array are more likely to choose a photo from the lineup. When the perpetrator is present, this higher choosing rate may boost correct identifications, likely aided by relative judgment. In a target-absent simultaneous display, the increased tendency to choose translates into greater risk of false identification. The reverse is true for the sequential format. Particularly when the perpetrator is absent from the lineup, the sequential format is preferable, reducing false alarms by 23% and identification of a designated innocent suspect by 2/3 (27% to 9%).

Some investigators may be concerned about the reduction of correct identifications for sequential lineups compared to simultaneous outcomes (3% and 15% average decreases, for the subgroup of "choosers" and for all witnesses, respectively). It is not known if this drop represents a loss of accurate eyewitness identifications, a reduction of lucky guesses, or both. Penrod (2004) has presented a compelling argument that guessing is a significant component of eyewitness decisions. This is likely to be particularly so with

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

the simultaneous format. Why? In simultaneous lineups, witnesses with weak memories can pick the lineup member who looks most like the culprit – a shallow and relative judgment. With a sequential lineup, the witness with a weak memory is inhibited by the greater difficulty of the task and cannot simply compare photos to arrive at a best guess (Wells, 2006).

It is also important to note that the sequential lineup is more diagnostic of guilt when the witness does make a choice, yielding odds of guilt almost twice that of the simultaneous lineup. For police, the critical question is: Is the identification a good predictor of guilt? The blind-sequential lineup procedure improves the odds that a suspect, if identified, is the actual culprit (Wells, 2006a).

Researchers use the phrase "sequential lineup" as shorthand for what is actually a collection of rules that represent best practice for conducting eyewitness identifications. For example, the sequential procedure assumes a single-suspect model (only one suspect in the array) and that the lineup task is the first identification attempt by the witness. Furthermore, an effective sequential procedure includes the following (see e.g., Lindsay & Wells, 1985; Cutler & Penrod, 1988):

- Effective lineup construction, designed to detect the unreliable witness and to protect an innocent suspect by drawing guesses to filler photos.
- A lineup of at least six members, five of whom are foils unknown to the eyewitness.
- Each lineup member chosen to match the witness's description of the perpetrator.
- The suspect's position in the lineup determined in an (approximately) random manner.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

- Instruction to the witness that the perpetrator may or may not be in the collection of photos to be displayed (an "unbiased" or "cautionary" instruction).
- Instruction to the witness that the sequence must be completed even if/after an identification is made, and the procedure conducted in this manner.
- The witness unaware of how many photos are in the sequence.
- Photos presented one at a time, with a decision made before examining the next.
- The witness not allowed to "go back" over the sequence.
- The witness not allowed to place photos next to one another.

*Blind lineup administration.* Double-blind experimental procedure, in which neither experimenter nor subject know the subject's treatment condition, is an essential element of sound scientific method used to prevent inadvertent contamination of research results. Interpersonal expectancy effects occur across a broad set of human interactions, necessitating a double-blind method for data accuracy (Harris & Rosenthal, 1985; Rosenthal, 1988; Rosenthal & Rubin, 2002). First noted as essential for lineup administration by Wells in 1988 and reinforced by a broader group of scientists in recommendations for lineups in 1998 (Wells, et al, 1998) there is wide agreement among eyewitness scientists that the double-blind lineup procedure is crucial in eyewitness procedures (see e.g, Wells, 2006b; McQuiston-Surrett, Malpass, & Tredoux, 2006; Haw & Fisher, 2004).

A double-blind lineup protocol (often simply referred to as "blind") helps to manage the inherently suggestive nature of the situation (Douglass, Smith, & Fraser-Thill, in press; Phillips, McAuliff, Kovera, & Cutler, 1999). A lineup administrator who does not know the identity of the suspect is unlikely to lead the witness to the suspect through verbal or

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

nonverbal cues. A supplement to this procedure—notification to the witness that the officer does not know which is the suspect—affords the additional advantage that the witness is less likely to seek or infer cues from the officer's behavior. Specifically, then, the blind lineup procedure includes the following key features:

- The officer displaying the photos does not know which photo depicts the suspect ("blind administration").
- The witness is informed that the lineup administrator doesn't know which photo, if any, is the suspect ("blind instruction")
- An assessment of witness confidence is taken at the time of the identification and before feedback from police or others (Wells, et al., 1998).

The NIJ Guide identified blind procedure as a direction for future exploration and field testing. The expressed concern was that this desirable feature was likely to be impractical in police field use. Focused research conducted since publication of the NIJ Guide indicates that the double-blind procedure essential to scientific integrity more broadly is also critical to the task of securing accurate eyewitness accounts (Douglass, et al., in press). Any operational difficulties in the blind procedure must be seriously weighed against the inherent defects of the non-blind lineup.

In the lineup situation, there are multiple avenues for administrator influence (Wells & Seelau, 1994) Most obvious are the unknowing leaks and "tells" that cue the witness as to the suspect's position in the lineup. These include verbal comment, facial expression, posture change, hesitancy, enthusiasm, a different handling of the photo, and any number of such unintentional signals. There is no need to assume intentionality of influence on the part of the lineup administrator for these influences to be dangerous to an innocent suspect.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

Two additional conduits for influence are the lineup administrator's selective attention to witness comments -- which can significantly shape the witness's decision -- and selective recording of fillers especially in case of low-confidence filler selections. Examples may help to portray these threats. Consider the lineup scenario, using either a simultaneous or sequential format, in which the witness pauses at Photo #3, the suspect's photo. Note that even a seemingly conscientious response from an attentive but non-blind lineup administrator may push the witness toward the suspect:

Witness: "Hmmm…" (long pause) "Maybe…that's the look …" (shrug).

Non-blind Administrator: "Tell me more…What's familiar about #3?"

Witness: "The eyes are familiar. The hair was different"…

(more conversation ensues)

Non-blind Administrator: "Okay, should I indicate you chose #3?"

The conversation may be quite different if the lineup administrator knows photo #3 to be a filler. The investigator may unintentionally push the witness away from the filler, a photo presumed to be not directly helpful to the investigation.

Witness: "Hmmm.." (long pause) "Maybe… That's the look …" (shrug).

Non-blind Administrator: "Okay, not exactly? Look carefully, you don't have choose unless you're certain." … Should we go to the next photo?"

Consider a final scenario, again with the witness slowing down to examine Photo # 3. This scenario reveals the easy error of selective recording.

Witness: "Hmmm.." (long pause) "Could be… I'm just not entirely sure…"

Non-blind Administrator: (If #3 is the suspect) records as tentative ID of suspect

(If #3 is a filler) records as failure to ID the suspect.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

The double-blind procedure counters the above problems by assuring equal attention to all witness comments and non-selective interpretation of witness responses. The witness must depend on memory and the administrator records an objective appraisal of the lineup procedure and results, thereby protecting the integrity of the lineup. Blind administration is essential. A lack of administrator masking confounds interpretation of lineup outcomes because such a flaw changes the investigative question from "Is this suspect the perpetrator?" to "Did the witness pick the person police thought was the suspect?"

When double-blind administration of the lineup is not used, there is potential not only for erroneous identification, but for the investigator's behavior to influence the eyewitness's subsequent confidence in her or her decision. Research demonstrates a modest correlation between witness confidence and accuracy (Sporer, Penrod, Read, & Cutler, 1995) and this relationship is easily corrupted. Factors that produce witness accuracy (e.g., good viewing conditions, lengthy exposure, distinct perpetrator features) are not the same as those that may affect confidence (e.g., confirmatory feedback from police, post-event information, or influence from other witnesses). A dangerous erosion of the confidence-accuracy relationship occurs when an eyewitness is exposed to factors that inflate confidence but have little relationship to accuracy (Wells & Bradfield, 1998).

A recent meta-analytic review underscores the need for lineup administrators to assess eyewitness confidence before any feedback is provided (Douglass & Steblay, in press). Analysis of 20 available laboratory tests demonstrated that confirming post-identification feedback received by the witness immediately after the identification (i.e., "Good. You identified the actual suspect.") inflated significantly the participant-witnesses' retrospective confidence reports when compared with a control group told nothing about the accuracy of

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

the identification. (Witnesses indicated how certain they had been at the time of their identification.) Perhaps more alarming is that an extensive range of variables was inflated in conjunction with retrospective certainty, including witness reports of the quality of their view of the perpetrator, how much attention was paid, ease of the identification, and basis for the identification. Participant witnesses who received confirming feedback were also more willing to testify about their identification and reported a greater ability to remember strangers. These outcomes demonstrate the reliability and robustness of distortions produced by post-identification feedback and reinforce the need for double-blind lineup administration and prompt full recording of eyewitness certainty comments.

The Hennepin County pilot program incorporated both double-blind and sequential components, offering the first objective baseline measure of eyewitness responses under these conditions in the field.

## Study 1 Hennepin County Field Pilot Program

In November 2003, the Hennepin County Attorney's Office embarked on a year-long pilot study during which investigators used a revised lineup procedure in the city of Minneapolis and three suburban communities. The goal of the Hennepin County pilot was to "implement an eyewitness identification pilot program with Hennepin County law enforcement agencies to reduce the possibility of incorrect identifications from photo lineups" (Klobuchar, 2004). The strength of scientific laboratory results underlying the new lineup protocol had convinced HC leaders that the new method was superior. Thus, the purpose of the pilot was not a comparative evaluation between new and old techniques. Instead, the program was an attempt to identify and remedy implementation issues, to determine how recommended lineup procedures can best be brought into practice. The task

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

was to see if "the techniques suggested by lab investigation really work in real police investigations" (Scoggin, 2004). Two questions framed the project: Can the procedures be effectively implemented in the field? Do the number and quality of identifications change with the blind-sequential procedure? (Scoggin, 2005).

## Method

### *Sample*

The Hennepin County pilot program focused on felony cases in four municipal police departments, including both *stranger* and *familiar perpetrator* lineups. The cities represented four levels of population and included both urban and suburban locales. In Minneapolis, the largest of the four cities, the protocol was used exclusively by Central Investigations, which handles violent crimes. The project involved 280 lineups from 117 cases, representing 206 eyewitnesses over a twelve month period ending in November 2004. (See Table 1)

The Augsburg College Institutional Review Board approved the research protocol. Hennepin County Judge Kevin Burke signed the appropriate documentation on behalf of Hennepin County to allow PI access to the confidential case files. Judge Burke prescribed that the data be extracted from these files without personal identifiers and that it be reported only in aggregate form.

The case files were gathered by the Hennepin County Attorney's Office and made available to the PI for the collection and analysis of descriptive data. Data were drawn directly from investigators' lineup reports which provided information regarding lineup structure and administration, lineup context (*e.g.*, crime type), and eyewitness responses

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

to the lineup task.[1] Incomplete reports were supplemented with data from the complete police file. Most investigators continued their prior reporting procedure, wherein each wrote a narrative summary of the lineup process. The Minnetonka Police Department also developed a supplementary form for the witness that provided instructions, including the cautionary instruction that the perpetrator may or may not be in the collection of photos to be displayed. Minnetonka witnesses were requested to check one of two options—"I am unable to select any photo as the suspect in this case" or "I have selected photograph # ___ from the group"—and were offered space to write comments.

*Procedure*

HC employed single-suspect lineups, and all lineups involved each witness's first identification attempt. The following five basic principles for blind sequential lineups were employed, the first three part of police procedures prior to the pilot program. (Additional detail is provided in Table 2.)

- *Effective lineup construction*. A six-member lineup included one suspect and five fillers, with fillers chosen to match the witness's description of the perpetrator.
- *Cautionary (unbiased) instruction*. The witness was instructed that the perpetrator may or may not be in the lineup.
- *Confidence statement*. A statement of witness confidence, in the witness's own words, was recorded at the time of the identification and before any feedback.
- *Blind Administration*. The lineup administrator did not know who the suspect was, and the witness was instructed that the administrator did not know which lineup member was the suspect.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

- *Sequential presentation*. Lineup photos were presented one at a time. The witness was not allowed to compare photos side-by-side at any time. The full sequence was completed even if an early identification was made, and the witness was informed that this completion is required by the procedure.

Each witness was instructed that he or she would view an entire photo series. The objective of the procedure was to neither inhibit nor demand a witness response after each photo. Therefore, the protocol did not require a specific "yes" or "no" answer to each individual photo. The witness generated the pace through the photos, commenting or signaling readiness to view the next photo. Under this procedure it is entirely appropriate if a witness makes an identification before seeing all the photos; such a witness has made a positive identification without needing to see the entire array. However, the protocol also requires that the witness views all the photos even if a choice is made before the lineup display is completed. When a witness identified a photo during the presentation of the array, the officer documented this, and then reminded the witness that the procedure required all the photos to be shown, and the remaining photos were shown. If the witness had not made any identification by the end of the photo array, the officer then solicited a response, asking the witness if any of the lineup members had been familiar. [2] This practice allowed the benefits of a full lineup display and the blind recording of any witness responses to each lineup member. One benefit of this may be seen, for example, if identification of a filler occurred early in the lineup; the investigating detective will certainly want to know how the witness reacted to the suspect's photo later in the lineup.

Hennepin County adjusted the recommended protocol so as to allow the witness to view the entire sequential lineup display as many times as desired. Review of the lineup

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

occurred only at the witness's request. If a review of the photos was requested by the witness, all photos were shown in the same order for the second "lap."

## Results

*Research question 1: Can the laboratory procedures be effectively implemented in the field?*

Hennepin County's situation was different from many jurisdictions that have implemented lineup reform. The Cromedy case in New Jersey prompted reform, the Avery case in Wisconsin, the Ryan Commission in Illinois. In Hennepin County, however, police chiefs could claim that existing procedures were working well. With the exception of one misidentification caught before trial, there had been no apparent problems with lineups (Klobuchar & Knight, 2005). Nothing seemed to be broken. County Attorney Klobuchar reports that discussions and training sessions about the new protocol nevertheless convinced four department chiefs to move forward with a pilot test as a means to reduce the risk of false identification and to increase confidence in eyewitness evidence (Klobuchar, Steblay, & Caligiuri, 2006).

The question of implementation effectiveness is largely informed by qualitative and anecdotal information. Midway through the pilot, a group of thirteen investigators conveyed their concerns and impressions at a meeting with the researcher and an attorney from the Hennepin County Attorney's Office. Additional feedback from police agencies was fielded by the County Attorney's Office. Interviews with police chiefs and law enforcement personnel were conducted by HC attorneys and are reported more fully in a recent article by Klobuchar, Steblay, and Caligiuri (2006). Issues that surfaced through

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

these meetings and interviews are summarized below. The introduction of double-blind administration and sequential presentation to lineup procedures initially posed problems, but proved to be less troublesome than originally presumed. The final action taken after the pilot—to roll out lineup reform county-wide—is the strongest endorsement of the new procedures (Scoggin, 2005).

*Sequential Presentation.* The problems experienced with implementation of sequential lineups were primarily in the simple details of orchestrating the new physical format of the photos. Prior to the pilot project, lineups consisted of "six-packs," six photographs presented on a single sheet of paper. Filler pictures were selected from online photograph repositories of arrested persons by using culprit description parameters. It took some experimentation and innovation to determine how to best turn the downloaded single sheet of paper into a viewable sequence of six individual photos. Investigators had to separate the six pictures and enlarge them, while maintaining consistency of background and color. "A lot of people spent a lot of time at the Xerox machine," remarked Bloomington's police chief Laux (Klobuchar, et al., 2006, p. 406). Within a week, however, one department created a new photo template to remedy the problem. In an attempt to make the process more efficient, ongoing efforts are being made in the county to create software and adapt the online photo repositories to the requirements of the new protocol.

The introduction of the sequential lineup presentation made apparent for many investigators the strong desire of eyewitnesses to aid their lineup decisions by comparing photos side by side. Even after being instructed about the new lineup format, witnesses still would ask to see two photographs simultaneously. Now realizing the increased

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

potential for misidentifications when eyewitnesses engage in relative judgment, investigators say they better understand and appreciate the new protocol. One investigator explained, "I like the format better. I like that the person is studying one picture. It's larger, and you can see them concentrating on a single picture and reflecting back to whatever event they had. From that alone, I think it's a success." (p. 406). The larger size of photos in the sequential display was considered a collateral benefit of the sequential format.

Ultimately, the change to a sequential lineup format caused few problems, none of them serious or enduring. Although New Hope investigators were initially reluctant to implement the sequential presentation requirement, Chief Gary Link remarked, "it took maybe two or three lineups before they realized that it wasn't that big of a deal." (p. 406).

*Double-Blind Administration*. Police chiefs and investigators were significantly more concerned about blind administration of the lineups. With a traditional lineup, an investigator conducted the array as part of the case investigation with no additional staff required. A number of operational challenges were anticipated with the new blind requirement and some problems emerged.

In smaller departments with few investigators, all officers may be focused on a single case, so a blind administrator can be difficult to find. Witnesses located at odd hours (middle of the night) or those in transient populations can make the coordination of a second investigator at the scene inconvenient. Most municipal departments operate independently and although municipalities have mutual aid packs for patrol response, cooperative arrangements are rare for follow-up investigations. Even in larger departments, difficulties surfaced. Some departments bring a near full force of officers to a

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

significant crime just after it happens. This "all-hands" policy constrains the pool of uninformed officers available to meet the requirement of a blind administration. A related circumstance occurs with investigations of great urgency (*e.g.*, an Amber Alert) or very high profile crimes. A concern specific to Minneapolis police was the problem of chronic offenders, whose mere presence in a lineup would reveal the identity of the suspect to a blind administrator (Scoggin, 2005).

In Hennepin County, 34% of the pilot cases involved multiple witnesses. In these situations, one witness's identification of a lineup member can compromise the blind status of the administrator for the next witness. A separate blind administrator for each witness may be prohibitively cumbersome and expensive. Finally, since a blind administrator must sometimes travel with the main case investigator to meet witnesses, the administrator loses time that would otherwise be spent working in a larger role on other cases.

Investigators also worried that the rapport and trust that develop between an investigator and witness may be jeopardized when an officer unknown to the witness is introduced for the viewing of the lineup. The lack of prior relationship between investigator and witness also was anticipated to be troublesome when the case involved an uncooperative witness. Crime often takes place between not-so-innocent bystanders, thus witness motives may compromise any lineup procedure, sequential or simultaneous. The "no choice" category (and possibly filler choices of witness responses) in this study may hide some of these uncooperative witnesses.

Real problems with the blind administrator requirement were less serious than anticipated. To solve problems related to limited availability of investigators to serve as blind administrators, smaller departments turned to staff, such as patrol officers, captains,

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

and sergeants. New Hope, the smallest department, reported no problems with the double-blind procedure despite employing only two investigators. Without greatly hindering collaboration, one larger department used property crime investigators as blind administrators for investigations dealing with crimes against persons and vice versa.

The introduction of a second officer to a witness for lineup administration was not found to hinder investigations in any significant way. No witness refused to view the lineup with the new unknown officer. On the contrary, some witnesses reported appreciation of the procedure and an understanding of the reasoning behind it.

Investigators reported no drop in effective suspect identifications or in their ability to "get the job done," as they compared their perception of blind sequential lineups to past simultaneous lineup outcomes (Klobuchar, et al, 2006, p. 408). Agencies also reported positive effects on lineup results due to the new procedures. Investigators noticed that witnesses were now less likely to make a misidentification of a filler. "We're not having a lot of people pick fillers," Chief Rikala observed (p. 410).

To address concerns about repeat offenders and multiple witnesses, as well as to explore options for investigators to deliver lineups for their own cases, the Minneapolis Police Department has been working with the Hennepin County Attorney's Office to develop laptop computer lineup administration. Laptops can randomly order six photos for viewing by a witness and be positioned across the table from the administering officer (dubbed the "Battleship" position, in reference to the well-known table game). In cases with multiple witnesses, the laptop will randomly shuffle the six pictures for each administration. This new procedure will allow investigators to conduct a lineup without the aid of a second officer, dispelling lingering concerns about the double-blind procedure. As noted earlier, the

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

NIJ guidelines were positioned as a "framework for innovation" (NIJ Guide, p. 9) in anticipation of technological developments such as computer-based imaging to add effectiveness and efficiency to lineup procedures. Sequential lineup presentation as well as double-blind procedure can be facilitated through laptop delivery of the lineup, as researchers do in the lab. Although computer-based lineups were not a formal part of the HC pilot, the lab technology may become the solution to some implementation issues.

Investigators sometimes followed other jurisdictions in the creation of functional equivalents to blind lineup administration for situations in which a true blind administrator is unavailable. The most common substitute method is the *folder* (or *envelope*) technique. Six lineup photos are randomly placed into six numbered folders by a person uninvolved in the case, shuffled, and then provided to the witness by the investigating officer. The witness is asked to respond to each photo without displaying the photo to the officer. This helps to maintain a blind status of the officer. In Hennepin County's neighboring Ramsey County, a wood-crafted 6-door "lineup box" provides a similar functional equivalent when a second officer slides the randomly positioned 6-pack photos into the box and the lineup administrator is positioned in the room so as not to view the photos. The witness opens, examines, and closes each of the six doors, one at a time.

Overall, police chiefs and investigators found the pilot project to be much easier to implement than anticipated. In smaller jurisdictions, investigators had the whole project underway in less than two weeks. In the larger jurisdictions, the process took less than a month. Initial skepticism and unease faded. "By the end of the project," Minneapolis Police Chief William McManus reported, "the burden on investigators was far less than my department had anticipated" (Klobuchar, et al., 2006, p. 409). The pilot project also

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

involved minimal cost. From an administrative perspective, the police chiefs had wondered if the need for blind administrators would significantly increase man-hours. However, as Minnetonka Police Chief Joy Rikala noted, "There [are] no cost implications of this. It's negligible." (p. 409). The double-blind sequential lineup procedure is well within the reach of police agencies.

Yet-unmeasured practical advantages of the new procedure are likely in the future. Better lineup screening devices allow police to move more quickly in their work, to find the right perpetrator without wasting time on false leads, and to remove perpetrators from the streets before additional offenses are committed. And, the potential for damaging cross-examination at trial regarding cues consciously or inadvertently sent to witnesses is effectively removed by the use of a blind administrator.

Chief Rikala's report of lower numbers of filler picks deserves comment. A low filler selection rate means that HC prosecutors and investigators can spend less time tracking down and clearing the filler to avoid defense challenges at trial. It is also important to recognize that a witness who identifies a filler (perhaps when the true offender is not in the lineup) is a "burned" witness, one who will not be seen as credible for the continuing investigation or for court testimony. Investigators do not want to spend their witnesses with lineup procedures that may prompt filler selections. Finally, filler identifications may imperil convictions even when the actual perpetrator is ultimately identified, as the mistaken identification will undercut the correct one.

The biggest hurdle in implementation seemed to be a general resistance to change. Thus, even fewer problems are expected the longer the protocol is used. New investigators will be trained in the reformed procedure, "It was simple to pick up." (p. 410). HC has

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

produced an effective DVD for training and review. A similar positive experience has been reported by Lt. Kenneth Patenaude (2006) of the Northampton Police Department (MA), where his department ultimately came to strongly prefer the new procedure. In 2003, the Northampton Police Department made an "additional modification to the policy, by making the blind administration of photo arrays the mandatory, rather than preferred, method of presentation." (p. 418).

*Research Question 2: Do the Number and Quality of Identifications Change with the Double-Blind Sequential Procedure?*

The sequential format is expected to lower eyewitness choosing rates.[3] Researchers believe this is due to the witness's movement from relative to absolute judgment, a process that also may involve an upward criterion shift (Wells & Olson, 2003). The witness knows that there could be another person, a better match to memory, coming later in the sequence, and at any given time the witness does not know how many photos remain in the array (Lindsay & Wells, 1985). Thus, he or she is forced to dig a bit more deeply into memory. If a match between memory and a photo is compelling, a choice from the lineup is likely; otherwise, the witness should reject the lineup. Guessing—lucky or otherwise—should be reduced. The sequential procedure is seemingly a more conservative test of memory, and, if this technique is working well, a low rate of filler selections is likely. In the best of situations, the blind sequential lineup would maintain a reasonable level of accurate identifications, but an appreciable drop in false identifications as guessing is reduced.

One of three outcomes will occur as the endpoint of a witness's decision for a police lineup in which a single suspect is present: a *suspect identification* of the person who

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

the police believe is the offender; a *filler* (known error) selection; or a *rejection* of the lineup (no choice from the lineup). Witness performance in the field is measured, then, through percentage rates of suspect identifications, filler selections, and *no choice* responses. In the field, however, we cannot assess ground truth—memory accuracy or error— so suspect identifications and filler selections become proxy measures. Unfortunately, these measures alone cannot tell us much about memory accuracy.

At the simplest level, a new lineup procedure that produces a plummeting drop in suspect identifications, a perilous rise in filler selections, or overwhelming confusion in witnesses, will and should raise eyebrows and concerns. Such outcomes signal that a procedure may not be conducive to tapping witness memory or perhaps that earlier rates of field eyewitness performance were dramatically misleading. Similarly, a sharp rise in suspect identification rates should give pause; while this outcome may indicate a better lineup procedure, it may alternatively indicate lineups with very poor fillers. Ambiguity is inherent in field measures, so an absolute level of goodness is not established. In a subsequent section of this report, I will return to the issue of how field data might best be interpreted.

Of importance at present is a cautious and nuanced understanding of filler identifications. Filler selections in the field, as in the lab, are counted as eyewitness mistakes. Filler selections are not dangerous errors (they typically do not lead to a prosecution of the filler), but the rate of filler selections, under the right conditions, can provide information about the risk for an innocent suspect in the lineup. Wells (2006b) has termed filler identifications "conditional proxy measures" that can work well under some conditions but not others. The key condition for use of filler selections as an indication of

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

the *risk* of false identification (not dangerous false identification itself) is present in this Hennepin County pilot: Administrator masking allows filler identifications to work as a conditional proxy measure.

Assessment of specific *change* in lineup outcomes resulting from use of the new lineup procedure would require suitable data from concurrent blind simultaneous field lineups against which to compare blind sequential lineup performance. There are no such comparative baseline data for blind simultaneous lineups in Hennepin County or elsewhere. However, existing sources of relevant information from other venues can be examined to provide a picture, albeit limited, of (presumably non-blind) simultaneous lineup field performance. The reader should keep in mind that the HC field data include some witnesses who elected multiple laps through the lineup and some lineups in which the perpetrator was familiar to the witness due to interactions prior to the crime. Also, in any field test, suspect identifications may include some unknown proportion of false identifications.

*Comparative field data from simultaneous lineups*. Behrman and Davey (2001), in a California field study, reported eyewitness decisions for fifty-eight *simultaneous* live lineups, with a suspect identification rate of 50%, filler choice of 24%, and no choice at 26%. In 284 photo arrays, 48% of the identifications were of the suspect; foil identifications were not recorded. Behrman and Richards (2005) later reported archival police data (a portion of the cases formed part of the database for the earlier 2001 study) for 424 photographic lineups and 37 physical lineups. These were single-suspect simultaneous lineups and all were first identification attempts by the witnesses (none were preceded by

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

identification procedures involving the same suspect). Fifty-two percent identified the suspect; 15% identified a foil.

Three teams of researchers from England (Valentine, Pickering & Darling, 2003) recorded the responses of over 3000 eyewitnesses to simultaneous live lineups, including situations of suspects known and unknown to witnesses. As summarized by Valentine et al., results of these studies are quite consistent: approximately 40% of witnesses identified the suspect; approximately 20% identified a filler, thereby making a known mistaken identification; and approximately 40% made no identification.

*Comparative laboratory data from simultaneous and sequential lineups*. Steblay and colleagues (2001) summarized thirty laboratory comparisons of simultaneous and sequential lineup performance. This review, representing 4145 test witnesses, demonstrated that the sequential procedure reduced eyewitness choosing rates, with significant positive effects on accuracy (see Table 3). Regardless of whether the criminal was in the lineup (*perpetrator-present* condition) or not (*perpetrator-absent*), the simultaneous format produced an almost even split between filler choices and *no choice* responses. There were significantly more errors in simultaneous versus sequential lineups when the perpetrator was not in the lineup, 51% versus 28% filler selection rate, respectively.

*Witness decisions*. For comparison purposes, the Hennepin County data (HC) is presented in the upper section of Table 3 alongside simultaneous (SIM) field data sets. Hennepin County generated a suspect identification rate of 54%, filler selections at 8%, and 38% of witnesses made no choice from the lineup. The 54% suspect identification rate is comparable to that achieved with simultaneous lineups in the field and higher than

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

laboratory sequential rates, and the filler selection rate (8%) much lower than other procedures. These rates change somewhat as the context of the crime shifts, particularly the relationship between witness and perpetrator, as discussed below.

*Witness performance on sequential repetitions ("laps")*. Ideal blind sequential protocol calls for only one viewing of the lineup per witness. Researchers reason that a second lap through the sequential lineup may produce a *de facto* simultaneous array. That is, subjects may begin to mentally compare photos and lapse into relative judgment. However, HC brought a practical worry to the considerations – that some number of good identifications would be lost due to overly cautious eyewitnesses. A revision to the procedure was determined: witnesses in the pilot project were allowed multiple repetitions, or laps, through the lineup, and lineup administrators were to record the details of this process. The details were not as thoroughly recorded as hoped, with 46% of lineup reports specifically indicating the number of repetitions. The results in Table 4 are based on these 128 lineups, summarizing witness decisions for those who viewed a lineup *just once, twice, three times,* or *more*.

Repeated viewing of the lineup was associated with significantly increased likelihood of filler choices (known errors), $\underline{X^2}\ (10) = 31.23$, $\underline{p} < .001$, $r_{\underline{s}} = .13$.[4] For crimes involving perpetrators familiar to the witness, this is somewhat less evident. With familiar perpetrators, the suspect identification rate was 92% for witnesses who took either one or two laps through the lineup, and 50% for the few witnesses who requested a third viewing, $\underline{X^2}\ (4) = 7.34$, $\underline{p} = .06$. For lineups in which the perpetrator was a stranger to the eyewitness, a risk of additional laps was most apparent in the filler selection rate, which increased from 3% to 29%, $\underline{X^2}\ (10) = 22.00$, $\underline{p} = .007$.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

Returning to the subset of 128 lineups, over half of the witnesses (53%) viewed the lineup just once. Another way to look at the impact of repeated viewing is to examine witness decisions in the remaining 47% of lineups, 60 lineups in which witnesses requested additional laps. In 15 of 36 lineups in which complete information was available, witnesses indicated recognition of a photo during the first showing of the lineup, with nine jump-outs (*i.e.*, the witness made an immediate choice or made comments such as "that's the guy,") and six tentative identifications. The tentative identifications included comments such as "hold that one" and "that looks like him." The second lap (for two witnesses, a third lap) was the point at which the witness confirmed his or her choice; 100%, all 15, selected the suspect.

Although the additional 21 witnesses selected a photo from the lineup, they did not indicate recognition until at least after the second showing of the lineup. In these cases, climbing error levels are apparent. Thirteen identifications made after two lineup showings produced 62% suspect and 38% filler choices; eight witnesses made a decision after three or more showings and generated more filler identifications (50%) than suspect identifications (38%). In summary, the evidence shows that a witness who has not made even a tentative identification at the end of the first lineup viewing presents a subsequent risk for misidentification.

*"Jump-out" identifications*. A concern of investigators was that sequential lineups might diminish the likelihood of "jump-out" identifications, inhibiting desirable witness expressions of absolute certainty. For this analysis, jump-outs were taken to be those lineups for which the investigator recorded an "immediate choice", and/or witness comments such as "that's the guy!" Of 175 choosers in the data set (those who actually

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

selected a photo from the lineup), ninety-six (55%) were jump-outs. The resulting choices produced 99% suspect identifications and only one filler choice.

The "immediate choice" criterion is similar to that used by Behrman and Richards (2005) in their field research as a signal of automatic processing versus eliminative memory strategies of witnesses. Six percent of their witnesses were reported by police to use such an automatic memory response. In this HC data, we use a broader criterion, including not just officer interpretation but also strong positive witness responses, and 34% of witnesses fall into this "jump-out" category.

*Stranger vs. familiar perpetrators*. The Hennepin County program required blind sequential lineups for all felony cases, regardless of familiarity between eyewitness and perpetrator. In 66% of the lineups, witnesses reported that the offender was a stranger. The following analyses explore eyewitness response as a function of familiarity and of the witness's opportunity to view the culprit. First is a comparison between situations in which the perpetrator was a stranger to the witness, based on the best knowledge of the case investigator, and those in which the culprit was at least familiar to the witness and sometimes known quite well. Not surprisingly, suspect identification rates were significantly lower for *stranger* crimes (35% as opposed to 90% for known perpetrators), $\underline{X^2}\ (2) = 74.68, \underline{p} < .001$, with lower choosing rates (47% versus 94% for known perpetrators). Filler rates were low in both categories (see top frame of Table 5).

The lower suspect identification rate in the *stranger* set of lineups may elicit concern from investigators. A finer distinction is perhaps useful (Table 6). Crimes of brief duration committed by strangers (estimated as only a few minutes) produced 32% suspect identifications and 11% filler choices. Crimes in which the witness viewed a stranger for a

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

longer time (more than ten minutes) generated a 59% suspect identification and 14% filler choice rate. We do not know the accuracy of suspect identifications, of course. These rates suggest that witnesses are more willing to choose from the lineup when they have had longer exposure to the culprit. Lower suspect identification rates occur in situations where one might expect weak memory. An interesting ancillary finding is that 43% of the witnesses who made a lineup selection after viewing a very brief *stranger* crime were reported to have expressed some qualifications to their identification (see table 6).

A similar breakdown of the *familiar (known) perpetrator* category also shows an outcome which is at least intuitively coherent. Witnesses who reported some familiarity with the perpetrator (*e.g.*, a familiar face seen on multiple prior occasions) chose from the lineup at a very high rate (91%), selecting the suspect in 84% of the lineups recorded, fillers in only 7%, and making no choice in 9% of the lineups. And, those witnesses who knew the perpetrator, often by a street name, made suspect identifications at 96% with 4% making no lineup choice. It should be noted that, in this latter group, persons making lineup choices included not only observers and victims of crime; 25% of the witnesses were those involved through indirect knowledge of the crime. Thus, this category included "confirmatory" lineups that are not typically part of laboratory studies.

Given the many factors that co-occur in each of the four viewing categories, it is risky to infer cause and effect between any set of them. Table 6 describes the correlates of these eyewitness experiences. The patterns of eyewitness response make sense, given the context for the identification. For example, brief interaction with a stranger produces the lowest choosing rates, jump-outs, and suspect identifications of the four groups. Also,

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

greater levels of qualifiers to the choice occur with stranger crimes than with familiar perpetrators.

*Witness confidence and decision outcomes*. Lineup administrators were asked to record verbatim any eyewitness comments regarding confidence. However, this requirement led to specific comments in only 15% of lineup reports (*n = 42*). Assuming that jump-out identifications also indicate a meaningful level of certainty and can therefore be added to the analysis, a total of 125 lineups afford information regarding witness confidence (45% of the overall lineups, and 71% of lineups in which the witness made a lineup selection). Witnesses expressed confidence in a decision *not* to choose from the lineup in only two of the 125 cases (1%). For analysis, the memorialized comments were sorted into four categories of decreasing certainty: (1) *jump-outs*; (2) *high confidence*—those not included as jump-outs but involving statements of 80%+ certainty or phrasing such as "quite certain," "sure," and "positive"; (3) *moderate confidence*, involving "pretty sure," "fairly sure" and estimates between 50% and 80%; and (4) *low confidence*, with such phrasing as "not sure," "not very," or "not too" and "low."

Within this subset of lineup data, witness confidence and decision outcomes were significantly related, with greater confidence associated with higher levels of suspect identifications, $\underline{X^2}\,(9) = 83.73$, $\underline{p} = .0001$, and $r_{\underline{s}} = .74$. This significant statistical relationship was largely due to the impact of jump-out decisions, 99% of which were suspect identifications. If the jump-out category is removed from analysis (leaving $\underline{n} = 26$), a significant relationship no longer appears. In each of the remaining three confidence categories (high, moderate, and low), witnesses selected fillers at a slightly higher rate than suspects (filler identification rates of 58%, 67%, and 63%, respectively), $\underline{r_s} = .08$.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

A similar relationship between confidence and decision outcome exists when only stranger identifications are examined: $X^2$ (9) = 31.08, $p$ = .0001 and $r$s = .63, when jump-outs are included ($n$ = 50); $r$s = -.07 when jump-outs are eliminated from the analysis ($n$ = 24). Again, filler rates are higher than suspect ID rates in the three remaining confidence categories: 75%, 60%, and 63%, respectively.

Confidence and witness decisions are significantly related in this sample when jump-out identifications are included in the analysis. Beyond jump-out decisions, however, even witnesses who express high confidence in their decision choose a filler more often than the suspect. Three caveats to these results are important. First, the data do not directly address the confidence-accuracy relationship, as ground truth (actual guilt or innocence) is impossible to ascertain in this archival field data. Second, only a very small number of lineup reports included a clear statement of witness confidence, therefore this sample may not well represent the broader data set. Finally, it is difficult in some cases (particularly the "jump-outs") to determine whether the confidence rating is directly that of the witness or is the officer's assessment of witness confidence. Given these difficulties, no further data regarding between confidence and other witness behaviors are reported.

*Cross-race and same-race identifications*. The research literature has established a reliable same-race identification advantage such that faces of one's own race are better remembered when compared with faces of another, less familiar race (Meissner & Brigham, 2001). The field data here do not offer clear information, particularly because accuracy of identification is impossible to ascertain in the field. In addition, while 96% of lineup reports ascribed the race of the offender, only 44% of reports included mention of the witness's race. Finally, it is appropriate to eliminate from analysis the lineups that

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

involved perpetrators who were well known to the witness. The remaining data leave a smaller subset of 109 lineups. In this group, cross-race identification decisions resulted in 53% suspect choices, and 11% filler identifications (a 64% choosing rate); same-race decisions generated a similar level of suspect choices, 55%, and 4% filler identifications (59% choosing rate). The 7% difference in known errors (fillers) is not significantly different, $z = 1.40$, $p = .08$.

S*ummary of data analysis*

Hennepin County double-blind sequential field tests produced acceptable suspect identification rates relatively comparable to those in prior laboratory and field tests. Repeated viewing of the lineup was associated with increased filler selections (known errors). The new procedure does not appear to have sacrificed jump-out identifications. Patterns of eyewitness response to *stranger* and *familiar* perpetrators were reasonable, with *stranger* suspect identifications at a lower level. Confidence and suspect identifications were significantly related, particularly for jump-out identifications. For other categories of expressed confidence (even *high*), confidence and decision outcome were not significantly related. A positive outcome of the project was the low filler identification rate, which suggests increased protection for innocent suspects. However, additional attention to the fillers is necessary.

*Could there be an alternative explanation for the HC results: poor fillers?*

Functional size of the lineup—the number of lineup members who effectively match the description of the perpetrator—is an important consideration for all lineups. Lineup fairness depends on adequate lineup construction as well as appropriate administration procedures, and lineups are vulnerable to bias in both structure and

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

procedure. A faulty lineup structure prior to the blind-sequential procedure may jeopardize the usefulness of this new protocol.

A blind-sequential protocol should lower the filler selection rate by inhibiting witness guessing, thereby reducing eyewitness error and danger for the innocent suspect. The HC data suggest that this objective was achieved. However, when the HC results were released, critics reasonably argued that the low filler selection rate (8%) could be due to poor lineup construction, i.e., perhaps the results are due not exclusively to the merits of the double-blind sequential procedure, but to poor construction of the lineups prior to the identification process. A low filler selection rate could occur if the lineup is too "easy": fillers are not plausible options, so eyewitnesses can arrive at the suspect through inference rather than memory. Taking this concern very seriously, we developed the means to analyze quality of the lineup structure through a laboratory *mock witness procedure* (Doob & Kirshenbaum, 1973) applied to a sample of the HC lineups.

## Study 2: Evaluation of Hennepin County lineup filler quality

### *Assessing lineup fairness: The mock witness method*

The evaluation of lineup fairness involves two related qualities: lineup bias and lineup size (Malpass & Lindsay, 1999). First, the lineup must not be biased against the suspect, i.e., the suspect should not be identifiable on the basis of position in the lineup, photo quality, or other non-memory cue. Second, all members of the lineup must be reasonably plausible suspects based on the description provided by the witness. Lineup evaluation is accomplished, then, by determining whether the suspect stands out in the lineup in a manner not attributable to the witness's memory of the event (bias), and

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

whether lineup fillers provide effective alternatives for the unreliable witness (size). This assessment is accomplished using the *mock witness method.*

The mock witness paradigm at first appears somewhat counterintuitive: Persons who did not witness the crime -- in fact have no knowledge of it – view the lineup and are asked to posit who the suspect is in the array ("Which person is the accused?"). The mock witness is provided one clue: the real witness's pre-lineup verbal description of the perpetrator. Armed with this information, the mock witness is hazarding a best guess based not on memory, but on inference derived from the physical description of the perpetrator. As recommended by Wells and Bradfield (1999), use of the specific form of the question "Which person is the accused?" instead of "Which person best fits the description?" also serves to capture the mock witness's use of any other non-memory information also available to the eyewitness (e.g., subtle aspects of lineup display that make the suspect stand out.)

The reasoning from this point is straightforward in regard to determination of bias. The real witness's identification is interpreted in the context of mock witnesses' ability to identify the suspect in the lineup. That is, the mock witnesses serve as a type of control condition against which to compare the actual witness's lineup choice (Wells, Luus, & Windschitl, 1994). If mock witnesses show preference for the suspect despite their absence of any memory of the crime, the real witness's selection of the suspect may also be due to non-memory factors rather than true recognition; any conclusion about accuracy of the real witness is confounded. As Valentine and Heaton (1999) explain, "A mock witness simulates the worst possible scenario of a witness who has no memory of the culprit beyond that which they gave in a verbal description…" (p. 61). A maximally fair lineup

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

would limit the damage of such a witness in a real identification task, in that all of the lineup members would fit the witness's description to the same extent; therefore, the suspect would be at no greater risk of identification than any one filler.

## *Method*

### *Sample*

104 college students each evaluated a sample of 37 lineups. The study was approved by Augsburg's Institutional Review Board and by the Hennepin County Court. Participants were recruited with posters and through the campus research participant pool and compensated with class credit or cash. Participants were required to sign a consent form and treated in accordance with APA ethical principles.

Lineup bias is not a property of a lineup per se, but rather a result of the interaction between the lineup and the verbal description provided by a specific witness (Wells & Bradfield, 1999). In order to use the mock witness protocol, it was necessary to find lineups in which the police report included the witness's prior verbal description of the perpetrator. Only one lineup per case was allowed for this analysis, reducing the available 280 HC blind-sequential lineups to 117. A sample of 50 lineups was requested and 52 provided by HC. Of these, 37 were appropriate for this research task. Lineups were eliminated from the sample of 52 for the following reasons: 1) the police report failed to indicate which lineup member was the suspect; 2) the perpetrator was familiar (known) to the witness, so a physical description was not provided; 3) a non-witness source implicated the suspect (e.g., license plate, weapon, citizen tip); or 4) it was not clear as to which eyewitness provided the description used to construct the lineup.

### *Procedure*

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

The testing was done by two experimenters. The first was blind to which lineup member was the suspect; the second experimenter (the PI) was not blind, but left the subject's cubicle during the rating of the photos. Neither experimenter interacted with the subject during the rating task. Presentation order of the 37 lineups was counterbalanced across subjects. The participants were instructed as follows:

> In this packet is a series of real police lineups. Connected to each one is a description of the perpetrator that was provided by the real witness to the crime. Some of these descriptions are very brief, others provide more detailed information.
>
> The entire description provided by the witness is given, even if some features cannot be seen in the photo. For example, an attribute of the perpetrator's body, not visible in the picture, may be part of the witness's description. Also, just as would a real witness, you can assume that clothing and sometimes appearance will have changed between the witnessed event and the time of the lineup.
>
> Your task for each lineup is to read the description, view the lineup, and make a choice, as best you can, as to **which of the lineup members you think is the accused**. That is, who do you think the suspect is?

*Results and Discussion*

To evaluate the quality of HC lineups, three statistics were calculated: the *proportion* of mock witnesses who choose the suspect, *functional size* of the lineup, and

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

*effective size* of the lineup (see Brigham, Meissner, & Wasserman, 1999, for a useful discussion of the strengths and weaknesses of each index of lineup fairness).

*Average proportion* of mock witnesses who choose the suspect. Lineup bias is most simply calculated as the proportion of mock witnesses who choose the suspect (Doob & Kirshenbaum, 1973). This *proportions technique* has been noted to be the most useful estimate of lineup bias (Brigham, et al., 1999). Also, the proportion of witnesses who choose the suspect is a significant predictor of the proportion of witnesses who identify the lineup member in a perpetrator-absent lineup (Lindsay, Smith, & Pryke, 1999). The median proportion of mock witnesses who chose the subject was 22%, a non-significant difference from the rate of chance at 17%. A compliment to this figure is more relevant to the current question of whether fillers were effective in drawing mock witness responses: An average 78% of mock witnesses chose a lineup member other than the suspect. All 6 photos drew choices (median across the 37 lineups = 6).

*Average functional size* of the lineup. Because lineup size directly contributes to fairness, a supplement to this *proportion index* of lineup fairness is a measure of *functional size*. The number of members appearing in the lineup regardless of their physical appearance or fit to witness description is referred to as *nominal size*. *Functional size*, on the other hand, is the number of lineup members that are physically similar to the witness's description of the perpetrator (Wells & Turtle, 1986). Wells and Bradfield (1999) explain that the lineup task must control for simple recall of the description by ensuring that all lineup members fit the eyewitness's verbal description equally well Functional size represents the number of plausible choices for the witness – the suspect and some number of viable alternatives.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

The lineup's *functional size* was calculated as the reciprocal of the proportion of mock witnesses choosing the suspect, 4.54 (Wells, Leippe, & Ostrom, 1980). This also corresponds to the median functional size across all 37 lineups.

*Average effective size* of the lineup. *Effective size* is an index of the number of plausible lineup members, without specific reference to the suspect (Malpass, 1981). This measure is useful as an indicator of the spread of choices across the lineup (operable alternatives). Median *effective size* of these lineups was 3.96. In essence, the calculation reduces the nominal size of the lineup for each filler photo that fails to draw its proportionate level of identifications. The specific calculation is offered by Valentine and Heaton (1999).

In summary, the fillers were found to be functioning well, drawing mock witness responses in appropriate proportions. Brigham, et al., (1999) contend that a lineup should contain a minimum of three viable alternatives to the suspect in a 6-person lineup, a criterion met by the statistics of this HC sample. Importantly, witnesses did not avoid the fillers, thus an alternative interpretation for low filler rate—ineffective fillers—can be ruled out in the Hennepin County study.

## Discussion: Hennepin County Pilot Program

### *Overall Summary: What has been gained?*

The Hennepin County pilot project has been judged a successful application of double-blind sequential lineups in the field. Blind sequential procedures are now county-wide, and adjacent Ramsey County has rolled out the new protocol. The new procedure

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

has established a standardized scientifically-based practice that has been demonstrated to work in real street investigations.

The key objective of the new blind sequential procedure is to secure better quality identifications based on what eyewitnesses actually remember. How do we know these HC lineup results are "better"? In the field, we cannot know identification accuracy in a hard factual manner. Instead we must look to procedures that have been demonstrated to protect witness memory and therein engender accuracy. What we *do* know are the following: (1) Laboratory evidence provides a compelling foundation for belief in the superiority of sequential over simultaneous format as a means to acquire a more trustworthy rendition of eyewitness memory and thereby reduce the risk of misidentification. (2) The double-blind procedure facilitates the witness's independent judgment and the investigator's objective documentation of that judgment. (3) Hennepin County investigators perceived no drop in suspect identifications or in their ability to do their jobs. The preservation of an effective suspect identification rate within the safeguards of the blind-sequential procedure is a very positive development. And, (4) Hennepin County lineups provided appropriate risk management for innocent suspects through effective blind sequential procedure. This is evidenced by the low filler rate, a conclusion reinforced by the results of the mock witness test of HC lineup fillers.

The new lineup technique reduces concerns that administrator influence and relative judgment have affected witness decisions. Because of these safeguards, Hennepin County prosecutors and investigators anticipate benefits in court. Most officers recognize the potential for harsh cross-examination should lineup evidence go to trial. Properly conducted, the blind sequential lineup can be expected to better withstand challenges to the

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

validity of identification evidence. The County Attorney's Office notes: "The procedures give us more information about what an eyewitness really means when an identification is made and, in the end, a clearer view of the truth" (Scoggin, 2005, p. 5).

The Hennepin County pilot project also brought the first available information regarding the effect of repeated viewing of the lineup. One can extrapolate from theory and existing laboratory data to surmise that a repeated sequential lineup will ease the witness into relative judgment, with a predictable reduction in performance accuracy. Now, Hennepin County has provided field data about the effects of lineup repetition: identifications are likely to be more reliable when the witness has made a decision after a single lap. While it is impossible to know the extent to which suspect identifications include false identifications of innocent persons, repeated lineup laps are shown to be associated with increased likelihood of error in the form of filler selections. Interestingly, witnesses who made an initial comment of recognition during the first lap were highly likely to identify the suspect in the second lap. Perhaps these are cases of witnesses who have reasonably strong memories of the perpetrator, but simply need to be sure with a second reinforcing look at the lineup. It remains important that lineup administrators record procedural details and witness comments carefully and methodically, particularly if a witness opts for a repeated viewing of the lineup.

Laboratory studies of blind-sequential lineups typically deal with *stranger* crimes of short duration, which might be considered the most difficult test of memory. The subset of Hennepin County data that involved stranger crimes provides evidence that laboratory principles generalize well and productively to the field. In addition, the Hennepin County data examined eyewitness responses to lineups with familiar perpetrators. Patterns of

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

eyewitness response to *stranger* versus *familiar* perpetrators square well with what is known regarding eyewitness memory, with *stranger* suspect identifications at a lower level. The Hennepin County data also indicate that blind sequential lineups work well in situations of familiar perpetrators and confirmatory lineups. Given that even a confirmatory lineup is still a test of memory (and the investigating officer is unlikely to know just how familiar the perpetrator is to the witness), sequential lineups provide an appropriate protocol.

The purpose of the project was to determine how recommended lineup procedures can best be brought into practice. The experience of the pilot project indicates that the blind sequential protocol is workable for police in both large and small departments without undercutting the ability to solve cases. At the same time, the protocol elicits valuable new information for the effective investigation and prosecution of criminal cases.

*Lessons from the field: Implications for policy and practice*

The Hennepin County experience offers specific suggestions for successful field use of the new lineup protocol beyond the recommended components of the double-blind sequential technique itself. Many of these recommendations have previously been put forth by other researchers and policy-makers, but deserve to be underscored as lineup reform efforts move ahead.

(1) *Background information: Transparent and close adherence to the underlying operating assumptions of double-blind sequential protocol*. Operating principles for effective lineup protocol include: a single-suspect lineup with properly chosen fillers; isolation of each witness from the potential influence of others; and an identification task that is the witness's first view of the apprehended suspect. These components of the lineup

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

process occur prior to the lineup proper, demanding early documentation of the witness's description of the offender along with a detailed summary of lineup preparation and all interactions with the witness preceding the lineup. From that point, memorializing the lineup itself is essential, as recommended by the NIJ Guide. Particularly in jurisdictions where the witness may have attempted an earlier identification, *recording of the witness's history in the investigation* is crucial – including specific results from each identification task and the suspect's history of appearance in each of the earlier identification arrays. The witness's relationship with the offender -- stranger or familiar – should be recorded as well.

(2) *Productive information gathering from the witness during the lineup procedure*. Procedure and instructions to the witness are tightly prescribed in the new protocol, and the blind lineup administrator is not to volunteer information beyond the protocol. However, the interaction between the blind administrator and the witness is not intended to be rigid or the conversation stifled. The lineup interview is an opportunity to learn from the witness, and a conversational flow *focused on the witness's experience and memory* is desirable. The blind-sequential interview may allow for but not demand comments or qualifiers from the witness for each photo. *"Yes," " No," " I'm not sure," " next picture"* and such phrases are all reasonable responses from the witness as a means for him or her to advance the lineup to the next photo. A forced "yes" or "no" may push the witness into a response that does not truly capture his or her position.

(3) *Effective recording of witness response*. The lineup administrator should keep a careful record of verbatim witness comments about all photos (preferably with videotape supplement), including qualifiers to the identification and comments about photos not chosen. The witness should be asked about his or her certainty of identification immediately

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

when a photo is chosen, or of non-identification at the end of the array. Witness comments should be recorded as stated ("I'm positive") rather than as the officer's assessment of the witness's position ("He was positive"). Alternatively, the witness may write a statement in his or her own words. Clarification and precise recording of witness responses is critical. For example, "the witness failed to identify the suspect" is ambiguous; did the witness identify a filler (which one?), indicate that the culprit is not in the lineup ("he's not there") or express indecision ("I don't know")? Filler identifications should be noted, including multiple identifications, as these may be diagnostic regarding the quality of the lineup and the identity of the suspect as perpetrator. Just as with a witness, feedback, forgetting and post-event information can intrude upon the administrator's memory of the lineup interaction. The blind administrator should document the results *before* conversation or feedback from the investigator, and delayed recording of the lineup should be avoided.

(4) *Standardized training, procedure, and reporting.* Until the procedure becomes habit for all officers, some mechanism for memory prompts is likely to be necessary. The latter could be achieved with a scripted reporting form and perhaps a simple laminated wallet card. Training should include a brief but clear explanation of the underlying rationale for the double-blind and sequential components. Understanding of basic principles of memory and the potential benefits to police investigations is likely to ease acceptance of the new protocol in the field and to spur the enthusiasm and creativity essential to generating solutions to the specific operational challenges of each local jurisdiction. In particular, investigators must be assured that the new procedure is not an assault on their professional integrity or a hindrance to securing timely and accurate identifications.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

The core rationale for these information-gathering and documentation requirements is illustrated in the HC written protocol for investigators:

> "Sequential identification and the following documentation requirements do a better job of conveying what a witness really means. In some ways this is Dr. Wells' real point. The witness didn't mean this is the guy – he meant this might be the guy, the photo looks a lot like him. We're learning that eyewitness identification isn't all or nothing. Identification takes place on a sliding scale. Some identifications "jump out" – the witness is absolutely certain …who committed the crime. Others are less sure or place conditions on the identification ("it's him except he's older" –thinner, or has different hair). The procedure…encourages the investigator to document what those judgments are. This gives the rest of us (prosecutors, judges, and jurors) a clearer view of the truth – and much more confidence in the result." (Scoggin, 2005, p. 4-5)

(5) C*aution with repeated viewings of the lineup*. A second lap should occur only at the witness's request and the witness should not be told beforehand that a second viewing is an option. The lineup should end with a maximum of two repetitions and a record kept of the eyewitness's response to each viewing of the lineup. Given the HC data, it must be presumed that an identification made on the second viewing, particularly with no recognition of a photo on the first lap, incorporates some increased level of relative judgment.

(6) *Development of functional equivalents.* For situations in which a blind administrator is unavailable, the practical need for emergency substitutions should be met with convenient but valid alternatives. It is desirable that researchers follow up in the lab to establish the effectiveness of proposed equivalents.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

*Lessons from the field: The interpretation of field studies*

As lineup reform continues, it is important that additional evaluative field data be collected and reviewed. Both scientists and non-scientists then will attempt to draw conclusions about the meaning of field data. The following points are offered to guide this potentially confusing endeavor.

Interpretation of the HC data illustrates three important considerations regarding lineup field studies. First, it is essential to be clear about what is being measured; this is particularly true when simple aggregate figures will represent the study to policy-makers and laypersons. Second, field measures are imperfect. There are no established absolute levels of "goodness," and the measures by themselves tell us very little about eyewitness memory accuracy. Instead, lineup outcomes must be evaluated within the context of the study design and the type of data that contributed to the statistical outcome, as well as estimated gains or losses in accuracy that are likely from the procedures employed. Finally, good field practice and tests must employ procedures that rule out alternative (non-memory) influences on eyewitness decisions.

*Be very clear about what is measured*. Any hope of comprehending field study results will fade quickly if researchers, field administrators, and intended audience have not shared a specified and detailed protocol for lineup procedure. Prior to lineup reforms, investigators have long-seated habits for conducting lineups, sometimes following a written departmental procedure, often without. It is important to ascertain which conventions of the status quo are intentionally or inadvertently transferred to the new lineup routine. HC had the benefit of established procedures that fed easily into lineup reform, e.g., one-suspect lineups of uniform size, lineup construction using a statewide photo repository, and

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

a policy of using only single identification attempts. An effective scripting of the new protocol pulled together previous and new procedures into a coherent package. An example from other jurisdictions that shows a more problematic scenario is the evidentiary requirement in New York and Illinois that demands a live lineup identification by the eyewitness. The practice that flows from this is that the eyewitness will have first successfully selected the suspect from a photo lineup. This introduces the possibility that the witness's recognition of the suspect in the live lineup stems from the previous procedure rather than the crime or that the witness can infer the suspect's identity due to his presence as a common denominator across two lineup tasks. Furthermore, unsuccessful witnesses will have been screened out in earlier tasks, distorting overall identification rates. Filler selection rates can be expected to be tamped down and suspect identification rates elevated for reasons unrelated to memory accuracy. Behrman and Davey's 2001 documentation of traditional simultaneous field lineups in California showed that the practice of using a second identification task increased suspect ID rates 17% for the later identification. Interpretation of data from a recent pilot project in Illinois (Mecklenburg, 2006) was problematic due to this and other problems with a non-standardized protocol (see e.g., Diamond, 2006; Doyle, Penrod, Kovera, Bull, & Dysart, 2006; O'Toole, 2006; Steblay, 2006; Wells, 2006b).

At the same time that clarity of initial protocol is essential, *it is also critical to pay close attention to subsequent deviation from prescribed protocol*. Blind-sequential procedure is a package of components that together form best practice. It is important to track how these components are implemented in the field, how revisions to the recommended protocol are employed, and their impact on the outcome data. One example

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

is the use of repeated laps in the sequential procedure. In HC, a witness's additional viewings of the sequential lineup generated more known errors (fillers). Would filler rates decline if witnesses were held to a single viewing of the lineup? Now we know: yes.

Some variability in lineup protocol is not a problem, particularly as it may represent natural field practice and if it is well documented. The challenge is to evaluate lineup outcomes when procedural changes violate prescribed protocol or when they confound interpretation of the outcome. For example, placement of more than one suspect in the lineup runs counter to recommended protocol; blind sequential protocol is very clear about a-priori definition of one suspect and at least five fillers. While it may be reasonably argued that the sequential format may help to minimize effects from some aspects of faulty lineup construction (Lindsay, Lea, Nosworthy, Fulford, Hector, LeVan, & Seabrook, (1991), post-hoc estimation of such effects will be difficult.

Finally, field data may be parsed many ways for analysis, with subsequent effects on the overall aggregate figures that become the simple summary of the more complex data. For example, HC chose to include every lineup conducted for felony crimes, including crimes in which the witness was familiar with the offender. Most HC lineups followed crimes of very short duration for which the witness did not know the perpetrator; not surprisingly, this subset resulted in lower suspect ID rates and somewhat higher filler selection rates compared to situations in which the witness had longer or even multiple exposures to the perpetrator. Of course, the aggregate statistics change if the mix of stranger versus familiar perpetrator percentages that make up the data set is adjusted. Clarity of results and subsequent comparisons and recommendations demand that the

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

audience and policy-makers know the particulars of both the witnesses' exposure to the offender and of the identification experience and how these affect the overall statistics.

*Be clear and realistic about the meaning of eyewitness performance measures.* A primary benefit of the laboratory test is that the data analyst can tally precise and meaningful percentages of correct identifications, filler selections, and false rejections in a target-present lineup. Knowledge of correct lineup rejections and identification errors in target-absent arrays likewise are quite straightforward because the lab researcher has controlled the offender's presence or absence in the lab lineup. It is somewhat more challenging to simulate and evaluate the risk to an innocent suspect in laboratory studies in as much as there are many ways in which an innocent suspect may find his way into a lineup in the real world. However, it is likely that an innocent suspect has at least modest physical similarity to the true offender in most cases. In the lab, the researcher therefore typically plants a suspect who looks similar to the perpetrator in a target-absent lineup. This procedure simulates the worst possible scenario that may occur in a real police investigation – i.e., a look-alike to the offender has become a suspect. An alternative method is to calculate the risk to any one innocent suspect as 1/6 of the overall filler identification rate in a (6-person) target-absent lineup. Either way, the lab researcher is certain that the "filler" category has captured all mistaken identifications.

Field lineup results can be much more challenging to evaluate. There is no parallel in the field to the laboratory's "target-present" and "target-absent" lineups, because the true status of the suspect as offender or innocent is unknown. While laboratory protocol is established to assess the witness's memory, witness responses in the field have implications for both the witness *and* the lineup. The purpose of the field lineup is to gain additional

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

knowledge about the likelihood that the perpetrator and the suspect are one and the same. The suspect in the lineup represents the investigator's belief about who the perpetrator is, and the witness's response may provide diagnostic information about whether the investigator has in fact placed the true perpetrator in the lineup (Wells & Olson, 2002). The lineup and its procedure must be set up in a manner that will challenge the witness not to simply confirm the investigator's belief, but to test memory for the offender.

In the field, then, *Suspect IDs* cannot be directly equated to *Accurate IDs*, because any false identification of an innocent suspect (dangerous error) is buried within *Suspect IDs*. A *Suspect ID* may be an accurate identification of the offender *or* a false identification of an innocent suspect. A *filler selection* is a known error but should not be confused with a dangerous false identification. There is no direct danger to the selected filler, but this choice by the witness is a signal to investigators that the witness has a poor memory of the offender, is guessing or uncooperative, or perhaps that the filler is a better match to the perpetrator than is the suspect. *No choice responses* will include those witnesses unable or unwilling to select from the lineup, or, particularly when a witness responds with "he's not there" will indicate that the suspect is not the offender.

Left with field measures that are inherently open to multiple interpretations, researchers must be very cautious as they determine the meaning of the data. The appropriate and effective evaluation of a study must occur at the nexus of witness response and the method used to generate the data. A powerful example of the confusion that ensues when this point is missed is provided by O'Toole (2006) in his critique of the Illinois pilot program.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

> "…There was one other glaring defect in the report's methodology: *It equated a pick of the police suspect with a correct identification* [italics in original]. To put a fine point on it, this means that the Mecklenburg Report would have counted every single one of the DNA exonerations as "correct" identifications. Even worse, the benchmark picked by the Mecklenburg Report actually rewards suggestive police procedures by skewing the results in favor of any method that encouraged witnesses to make more "suspect" selections regardless of accuracy." (p. 19-20).

*Employ procedures that rule out alternative (non-memory) interpretations of witnesses responses*. The objective of a lineup is to accurately access the eyewitness's memory of the perpetrator, circumventing non-memory factors that may otherwise influence the witness's decision. Examples of non-memory factors include expectations and beliefs of the witness, inferences that the witness may draw from the lineup construction or presentation, the relative judgment process, and influences (imagined by the witness or real) from the lineup administrator. Challenges to eyewitness identification evidence typically claim that the witness's decision can be attributed to non-memory factors. Assertions of sound eyewitness evidence must be able to demonstrate that the identification is of the highest quality – that extraneous influences on memory have been avoided. To that end, field practice must rely on procedures that have been devised to secure memory accuracy, and evaluation of field data must recognize the extent to which the outcomes represent procedural safeguards against memory error. One requisite safeguard, as noted above, is double-blind administration of the lineup (Wells, 2006b); a second is reflected in the mock witness test of filler quality conducted by HC. Both

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

procedures – one a method to prevent suggestibility effects stemming from the investigator and the second an assessment of how well lineup construction has constrained suggestive presentation – bring greater confidence in the accuracy of witness decisions. In the field we must depend on the design of the study to help rule out non-memory explanations of witness responses. An understanding of field lineup outcomes demands that those who design, undertake and analyze field research understand central principles about human memory, lineup research, sound scientific method, and common police practice.

The usefulness of laboratory lineup research is to methodically identify and strip away factors that reduce witness accuracy and so to devise techniques that add precision to our attempts to access witness memory. The new double-blind sequential lineup procedure successfully employed by Hennepin County was designed to limit the impact of non-memory factors that may occur in traditional lineups. The fruitful collaboration of HC and lab is extended now in Study 3, in a further investigation of best practices.

## Study 3: Laboratory tests of lineup protocol revisions

Underlying recommended lineup protocol is a theoretical model that explains how eyewitnesses process information, how memory can be effectively tapped or unfortunately contaminated, and the conditions under which better memory products may be expected. Empirical work has further demonstrated that relatively simple changes in lineup structure or procedure (Steblay, 1997) can dramatically influence witness accuracy. Therefore, even seemingly benign changes to lineup protocol may require empirical examination. Study 3 addresses two questions regarding adjustments to recommended lineup procedure.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

*Repeated laps of the sequential lineup*. Hennepin County has structured a lineup procedure that allows a smooth logistical process and makes theoretical and practical sense. All key components of a blind sequential method are included except one: Instead of limiting the eyewitness to the recommended single viewing of the lineup, HC allowed the witness to repeat the lineup. The HC field data revealed that repeated laps of the lineup were associated with increased numbers of decision errors as revealed by filler selections. In the laboratory this investigation can be extended to measure identification accuracy. The research question is: What is the effect of a witness's repeated viewing of the lineup on witness accuracy?

The decision to allow a hesitant witness a second chance at the lineup was a revision aimed at securing a greater number of true positive identifications. However, one could extrapolate from theory and research to surmise that this deviation will move the lineup format in the direction of a simultaneous presentation and give the witness greater opportunity to engage in relative judgment. Based on this logic, it is hypothesized that the performance of eyewitnesses on a repeated sequential lineup will not improve identification accuracy, but rather will approximate that of witnesses who view a simultaneous lineup: more choosing, increased correct identifications in the target-present condition, and increased false identifications in the target-absent condition.

*Impact of familiar foils*. The second research question relates to lineup structure. HC investigators recognize that in some instances lineup foils are familiar to the witness, a fact unknown to the lineup administrator until the lineup is underway. This circumstance is particularly likely to occur with gang-related crimes in minority populations, wherein the photo pool of same-race, same-age persons available for lineup foils is constrained. The

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

ideal lineup –with five unfamiliar foils -- is unrealized. The research question is: How does familiarity with lineup foils affect the decision of the eyewitness?

A lineup size of at least six is prescribed as a safeguard to protect the innocent suspect. Errors of memory should be distributed across fillers in a manner that reduces the likelihood of false identification. A reduction in number of fillers is worrisome, as there are fewer foils to absorb errors. Researchers refer to the number of photos in the lineup as its *nominal* size. A lineup with fillers that are disparate from the perpetrator description or that can be easily dismissed by the witness for reasons other than a lack of match to memory is unfair. In such a case the *functional* size of the lineup (real choices for the witness) becomes smaller than its nominal size. A reduction in number of fillers changes the chance distribution of choices, thus should logically exacerbate the effects of differential choosing that occur in simultaneous versus sequential lineups. If a higher choosing rate is maintained for simultaneous lineups despite reduced functional size, witness choices will be spread over a smaller number of photos. The result will be an elevation of correct identifications when the target is present but also an increase in identification errors for target-absent lineups compared to the sequential lineup.

Recent research provides evidence for another concern, that the addition of very weak alternatives (*duds*) to a judgment task increases the perceived likelihood of the focal outcome (Windschitl & Chambers, 2004). Although the investigators of this *dud* phenomenon did not use a lineup task in their research, they posited that confidence judgments of lineup witnesses are a real-world example for which the *dud-alternative effect* is relevant. More specifically, their work suggests that the inclusion of ill-fitting lineup distracters may boost the eyewitness's confidence about whoever is chosen from the lineup and about how well the

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

selected person matches memory for the culprit. The current study will examine both accuracy and confidence as a means to determine whether the dud-alternative effect extends to familiar foils in lineups. It is predicted that within the simultaneous lineup condition, decreases in the number of real filler choices will be associated with a higher level of choosing and a greater number of both false identifications in target-absent lineups and correct identifications in target present lineups. Given the sequential lineup's tendency to hold down choosing rates, it is expected that decreases in the number of real foil choices will not affect choosing or accuracy rates. Foil familiarity is expected to be associated with higher levels of confidence in both types of lineups.

Study 3 was structured to explore these two deviations from prescribed lineup protocol—repeated viewing of the sequential lineup and reduction in lineup size due to foil familiarity—while also testing two variables common to lineup lab investigation, simultaneous versus sequential presentation format and presence versus absence of the perpetrator in the lineup. The inclusion of standard conditions allows comparison of outcomes to past research and integration of findings into the theoretical foundations of the research, as well as comparative evaluation of the sequential versus simultaneous lineup format. The procedures for both simultaneous and sequential lineup formats included unbiased instructions, blind administration, and fair lineup construction. The sequential lineup differed from the simultaneous in its sequential positioning of the photos, in instructions specific to sequential lineup process, and in the option for additional reviews (laps).

## Method

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

The study design is a 2 X 2 factorial with independent variables of lineup presentation (simultaneous or sequential), and target presence in the lineup (present or absent). Number of lineup viewings and functional size of the lineup are ex post facto (non-manipulated) variables, varying naturally depending on each subject's previous exposure to the foils and the subject's decision as to whether to repeat the lineup viewing. The inclusion of these two variables in an ex post facto configuration is intentional; as a naturally occurring phenomenon, the behavior affords greater ecological validity to the laboratory results.

Key dependent measures are witness choice, accuracy, and confidence. For target-present lineups, aggregate outcome measures are recorded as frequencies and percentages of correct identifications, filler selections, and incorrect rejections of the lineup; for target-absent lineups, outcome measures are correct rejections and error identifications of any foil. Confidence is assessed through subject report on a 1-6 scale.

*Participants*

372 undergraduate students took part in the study, male and female, ages 18 to 65, with a median age of 20 years. Eighty-seven percent of participants identified themselves as Caucasian. Participants were treated in accordance with American Psychological Association Ethical Standards for Treatment of Human Subjects. The experimental protocol was approved by Augsburg's Institutional Review Board. In order to achieve appropriate levels of statistical power (.70 to .80, depending on the specific analysis), the study required 370 subjects, with a greater proportion in the sequential condition. Participants were recruited through the existing college research participant pool, recruitment signs posted on campus, and announcements in classes. Participants were provided the choice of course

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

credit (for participant pool members) or a $5 payment. Student actors featured in the video and lineup segments of the laboratory materials provided written consent for their images to be used for laboratory purposes.

*Stimulus materials*

The experiment was delivered to subjects via laptop computer within an Authorware software program. A video of a short (30-second) purse-snatching incident served as the stimulus incident. The event was filmed in color with audio, shot from the victim's perspective, and the male Caucasian perpetrator, age 21, is visible for approximately 10 seconds.

A 6-person lineup provided the memory test for subject eyewitnesses. The lineup consisted of Caucasian males of approximately 18-23 years of age and was constructed to capture moderate physical similarity between lineup members and the perpetrator. In a prior pilot study, 17 participants watched the video and were asked to describe the perpetrator first via free recall, followed by prompts for clothing, race, hair/eye color, height and age. The modal description, excluding clothing, was used to find nine potential lineup members (a fit-to-description method). Next, 11 additional participants who had not seen the crime video were presented with a 10-photo perpetrator-present lineup and asked to decide "Which one of these photos best meets the description?" The participants were allowed multiple, rank-ordered answers. The same 11 participants also were shown a side-by-side comparison of each filler photo with the perpetrator and asked to rate the similarity of each of the nine (one at a time) foils to the perpetrator, on a 1-10 scale. This produced a range of scores for the nine photos from 2.09-5.18 (low to moderate similarity). Finally, based on these measures, 6 fillers were selected. No one filler stood out as an obvious "innocent" suspect nor did the

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

perpetrator stand out as the best fit to his own description. Each photo was a full frontal head-and-shoulders view with a gray background. All lineup members including the offender wore their street clothes for the lineup, none matching the clothing worn by the perpetrator at the time of the crime.

For each subject, the computer program generated a 6-person lineup of sequential or simultaneous format, target-absent or target-present. The six fillers rotated in and out of the target-present lineup. The position of fillers in all lineups and the position of the perpetrator in the target-present array were balanced, with the exception that the offender never appeared in position 1.

The stimulus crime video and subsequent lineup featured *current or recently graduated Augsburg College students, a point central to this project*. Stimulus materials were prepared in April of 2003. The currency of the video allows the natural occurrence of subjects' previous familiarity with lineup foils and the perpetrator, and subsequent evaluation of lineup performance for student subjects who recognized lineup members from outside the lab. A pilot study demonstrated familiarity percentages of 45%, 15%, 20%, 15%, and 5% for subjects who recognize 0, 1, 2, 3, and 4 foils, respectively. The current study found familiarity percentages of 35%, 20%, 14%, 12%, 7%, 5%, and 7%, for subjects who recognized 0, 1, 2, 3, 4, 5, and all lineup members, respectively.

*Procedure*

Each subject was run individually with instructions provided through the computer program and by the experimenter during a 15-miniute laboratory interaction. The experimenter maintained a blind status by remaining across the room from the subject, with the laptop computer facing the subject. The experimenter also positioned herself

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

perpendicular to the subject, rather than in a direct sight line. A minor deception was employed to establish the blind status of the experimenter for witness-participants (see instruction below) by informing the witness that the specific perpetrator in the witness's film was one of many employed in multiple versions of the film, thus not knowable to the experimenter. The computer prompted the subject to wait for specific instructions from the experimenter at one key point in the process. Subjects were informed that the study is funded by the National Institute of Justice and results were to be used to inform police practice nationally, therefore to "please pay serious and close attention to the procedures." After a brief introduction, subjects worked through a computer application that requested demographic information and showed the crime scenario. The experimenter was out of the room during this time. At the conclusion of the crime video, the experimenter re-entered the room and provided additional instructions. The script for the experimenter emphasized five key points:

- The film segment you saw is one of a number we use. It was randomly generated by the computer, so that I don't know who the perpetrator was in your display.
- In the lineup you're about to see, we are interested in whether you recognize one of the lineup members to be the perpetrator of the crime in the film. However, the lineup may or may not include the perpetrator you saw in the film.
- Sometimes the appearance of the offender will change between the event and the lineup. Please keep this in mind.
- This procedure works best if you view all of the photos – So the program will allow you time to examine each photo in the full lineup.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

- I am here to record any comments that you may have about the photos, but I cannot answer questions about the crime video or the lineup.

The computer maintained a data file that captured aspects of the method and subject responses, including demographics (age, sex, race), target presence/absence, lineup format (simultaneous or sequential), position of the perpetrator (randomly determined, with the exception that the perpetrator never appeared as the first photo), number of viewings of the sequential lineup, subject choice, and subject rating of confidence. The subjects were also prompted to report their familiarity with any of the crime scene and lineup participants, and these responses were recorded through the computer application. In addition, the experimenter kept a written record of any subject comments and questions, including verbatim comments about familiarity with any of the men in the photos, qualifiers offered, and expressions regarding confidence.[5]

## Results

### *Overall eyewitness responses*

Tables 7, 8, and 9 document witness performance in simultaneous lineups (column 1) and sequential lineups (columns 2-5). The direct comparison of simultaneous to sequential lineup performance is available from columns 1 and 2; these figures, representing data from all witnesses, represent performance of the simultaneous array (Sim) and a sequential procedure after one showing of the lineup (Seq1). Column three (SeqFinal) indicates the endpoint of the witness decisions after all laps through the lineup. Columns 4-5 break out the sequential subjects into those who did not request more than one viewing (SeqHold) and those who opted for more than one viewing (Seq+). Otherwise stated, each witness who saw a sequential lineup is represented in three columns on this table: Response

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

after one viewing (Seq1), final decision (SeqFinal), and response in either in the one-lap (SeqHold) or multiple-lap (Seq+) category.

Table 7 includes all 372 witness participants. Table 8 details the subset of participants for whom the offender was a stranger (n=253), and Table 9 shows the remaining witnesses who report familiarity with the perpetrator from interactions prior to the study (n=119). Sixty-eight percent of participant-witnesses stated that the perpetrator of the crime was a stranger to them, perhaps coincidentally very close to the 66% Hennepin County proportion.

After one viewing of the lineup (standard procedure), participant-witness choosing rates were at 35% overall, and 35% and 36% for simultaneous versus sequential lineups, respectively. These are lower choosing rates than are typical for laboratory or field outcomes (see Table 3), particularly given that 32% of the witnesses reported that the perpetrator was familiar to them from experiences prior to the lab study. It appears that either this crime scenario was quite challenging for memory encoding, the lineup task particularly difficult, witnesses very cautious, or all of the above. I will return to this point below.

*Hypothesis 1 Repeated viewing of the sequential lineup*

The expectation for the first hypothesis was that performance of eyewitnesses on a repeated sequential lineup should approximate that of witnesses in the simultaneous lineup: higher choosing rates, increased correct identifications in the target-present condition, and increased false identifications in the target-absent condition. Fifty-three percent of witnesses elected to repeat the sequential lineup. However, only six witnesses opted for a

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

third viewing (lap); therefore the analyses combine second and third laps, and simply refer to first versus final laps.

*Target present lineups*. Table 7 details witness choosing rates for first and final viewings of the lineup, in the columns headed *Seq1* and *SeqFinal.* The choosing rate increased from one lap to the final lap, from 46% to 62%, and the pattern of witness decisions was significantly different from first to final lap (Sign test produced $N = 16$, $x = 1$, $p < .0001$). As predicted, correct identifications increased, by 6%; filler rates (errors) also grew 10%. Another way of looking at this pattern is to consider the individual choices of subjects who elected to review the lineup a second time, specifically whether their decisions improved as they moved from the first to final lap. For 69% of these witnesses, lineup responses remained the same from first to final lap. The remaining 31% changed their answer; for 65% of these subjects the change was not productive (a change from a "no choice" to a filler) and for 35% the subject moved from an incorrect (filler or "no choice") to perpetrator selection. Otherwise stated, the second viewing of the lineup improved performance for 11% of witnesses who went on to a second look (6 of 54); for almost twice as many (20%), performance declined.

*Target absent lineups*. The choosing rate in target absent sequential lineups increased from the first to the final repetition (26% to 42%), and a significant difference in response pattern was evident (sign test produced $N=16$, $x = 0$, $p < .0001$). For those subjects who opted for a repeat of the lineup, there was ***no gain*** in performance: 70% maintained their initial answer; 30% made a worse response (changing from correct rejection to a filler selection). Witnesses viewing a *stranger* crime were slightly more likely to take another

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

lineup lap when the target was absent versus present, although this difference (64% vs. 59%) was not statistically significant.

A logical question is whether those witnesses who did not request a repetition of the lineup generated greater accuracy compared to the entire group at the end of one lap. As can be seen on Table 7 in the *SeqHold* versus *Seq1* columns, this seems to be the case if the target is present; a higher choosing rate led to correct identifications at 40% and just 1% increase in filler selections above the entire group (*Seq 1*). However, when the target is absent, the 10% higher choosing rate results in a 10% higher error (filler) selection rate. Thus, those witnesses who stop after one lap are not necessarily a more reliable group. A diagnosticity ratio confirms this: At the end of one lap, the ratio for all witnesses is 6.50 (.26/.04); for those who elected just one lap, the diagnosticity ratio is 6.67 (.40/.06). The same pattern is true, if one calculates diagnosticity ratios for the subset of *stranger* perpetrators (Table 8).

In sum, when witnesses were allowed to repeat the sequential lineup, errors increased above the rate of sequential 1-lap lineups. The negative effects of additional laps in the sequential lineup produced errors not equal to, but significantly greater than the simultaneous lineup, $X^2$ (2) = 7.98, $p$ = .02, target-present, and $X^2$ (1) = 4.10, $p$ = .04, target absent.

*Hypothesis 2 Attrition for familiarity*

The second hypothesis addressed the impact of downward lineup size adjustments due to the witness's familiarity with lineup members (*Attrition for Familiarity* or AF). Within the simultaneous lineup condition, AF was expected to be associated with a higher level of choosing and therefore a greater number of false identifications in target-absent

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

lineups and correct identifications in target-present lineups. Within the sequential lineup, AF decreases in lineup size were not expected to affect choosing or accuracy rates.

*Choosing and accuracy*. Data for *stranger* crimes ($n$ = 253) were used in this analysis as were witness responses at the end of the first sequential lap only. The question of interest is whether there were changes in choosing and accuracy from the full lineup to lineups sizes reduced by AF. Because of the very small numbers of participants who knew 3-6 lineup members, post-AF lineup size was collapsed into just two categories, 0-3 and 4-5. These two post-AF categories are compared to a full lineup size of 6 in Table 10. (Only one witness knew all six lineup members; the lineup was a target-absent simultaneous display and the witness correctly rejected the lineup.)

The data first are collapsed across target present and absent conditions, to produce overall choosing and accuracy rates for each lineup format as post-AF size decreased. The simultaneous lineup showed a decrease in choosing (40% vs. 30%) and increase in accuracy rates (32% vs. 45%) as the lineup dropped from a full 6-person lineup to half that size or smaller (0-3), $z$ = .77, $p$ = .22, $r$ = .09 for choosing and $z$ = 1.0, $p$ = .16, $r$ = .12 for accuracy, but neither statistically significant. The sequential lineups produced a significant (30%) drop in choosing as the lineup size diminished, 38% vs. 8%, $z$ = 2.14, $p$ = .02, $r$ = .24. As with the simultaneous lineup, within the sequential format a non-significant increase in overall accuracy, 36% vs. 54%, was associated with a drop in lineup size. Thus, contrary to prediction, AF decreased choosing rates for both lineup formats, and sequential lineups were significantly affected by AF.

As can be seen in Table 10, the impact of AF on simultaneous lineup choosing rate showed up in a non-significant 10% increase in hit rate when the target was present and

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

increased correct rejections (12%) when the target was absent. In sequential lineups, there was a dramatic drop in choosing for both target present (34%) and target absent (28%) lineups from the full to smaller lineup. This reduction in choosing reduced accuracy to zero in the target-present small (0-3) lineup—where no lineup choices were made—and increased accuracy by 29% for the target-absent small lineup, in which only one witness made a choice from the lineup. It should be noted that some sample sizes in these AF conditions were quite small.

The 0-3 AF lineup size is a substantially truncated lineup, a point that would only be apparent to witnesses viewing a simultaneous lineup. Thirty percent of witnesses chose from a simultaneous lineup of size 0-3—whether the perpetrator was present or absent. Witnesses viewing a sequential lineup were not aware of lineup size; for most witnesses who could easily eliminate 3-6 of the lineup members due to familiarity, the lineup ended before they made a choice. This differential choosing rate in simultaneous versus sequential lineups (30% vs. 8%, $\underline{z} = 1.47$, $\underline{p} = .07$, $\underline{r} = .26$) suggests that relative judgment may be guiding the former group and that absolute judgment is more strongly present in those witnesses faced with a sequential lineup. The impact of duds appears to be more dramatic in a simultaneous lineup, where the witness can see all remaining alternatives and in which the attrition of lineup size is very salient. The sequential presentation, on the other hand, does not allow the witness to know the number of additional photos to be shown or to review those already passed, thus changing the impact of attrition.

*Confidence*. Increased foil familiarity was expected to be associated with higher levels of confidence in both types of lineups following the logic of the *dud-alternative effect*. Confidence was measured after completion of the entire lineup, rather than at the time of

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

identification of a specific photo. For witnesses who were familiar with the perpetrator, the predicted relationship did exist: $r$ (119) = -.31, $p$ = .001, 2-tailed; as the lineup became smaller, confidence grew. However, for stranger identifications, there was no significant linear relationship between confidence (measured 1-6) and AF (0-6) for the overall data, $r$ (253) = .02, $p$ = .72 (2-tailed) or any of the four conditions separately: Simultaneous TP, $r$ (62) = .07, $p$ = .58; Simultaneous TA, $r$ (56) = .19, $p$ = .16; Sequential TP, $r$ (66) = -.04, $p$ = .74; and Sequential TA, $r$ (69) = -.05, $p$ = .71.

*Stranger and familiar perpetrators.* The pattern of witness response to stranger versus familiar perpetrators in the lab was similar to that in HC. Perhaps just coincidentally but also conveniently, 2/3 of the witnesses in both samples reported that the perpetrator was a stranger. We must keep in mind that there was no variation in the perpetrator as stimulus in the lab (just one perpetrator for all witnesses), however in the field the perpetrators of course varied across crime scenes, as did viewing conditions for the witness. The absolute numbers that detail witness response should not be expected to be similar across lab and field. However, the relative differences may be usefully examined.

In both the lab and field, the choosing rate for familiar perpetrators was higher than that for strangers, not an unexpected finding. In the laboratory target-present sequential lineup condition, choosing rate for final decisions was at 53% for strangers and 76% for familiar perpetrators; in the field the figures were 46% and 93%, respectively. As seen in Table 5, suspect identifications in the field for familiar perpetrators were 55% above that of strangers; in the lab, this difference was 52%.

*Comparison of sequential to simultaneous lineups*

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

*Choosing and accuracy*. Overall, the simultaneous condition produced 42% and 27% choosing rates in target-present and target-absent arrays, respectively. The sequential lineup produced choosing rates of 46% and 26%, target-present and absent, respectively. There was no significant difference in choosing rate between lineup formats in either target-present ($z$ = .57, $p$ = .28) or target-absent ($z$ = .17, $p$ = .43) conditions. The two lineup formats also generated similar accuracy at the end of one viewing, as can be seen by comparing the *Sim* and *Seq1* columns in Table 7. Separate analyses of target-present and. target-absent conditions show no significant differences in witness decisions between the simultaneous and sequential formats, $X^2$ (2) = .375, $p$ = .41 and $X^2$ (1) = .047, $p$ = .41.

*Diagnosticity*. The statistic of diagnosticity compares the identification rate of the perpetrator to that of an innocent person in the lineup (Wells & Turtle, 1986; Wells & Olson, 2002). For practical reasons, the diagnosticity of different lineup procedures can be compared to determine which yields the greater probative value of its identification evidence. Diagnosticity calculations require an estimate of the risk to an innocent suspect. In this case, there was no a-priori specification of an innocent suspect in the target-absent lineup; therefore, the average rate of identification per lineup member (percent of identifications divided by 6) was used to calculate the diagnostic value of the sequential vs. simultaneous display. Given the similarity of sequential vs. simultaneous lineup results, it is not surprising to see similar diagnosticity figures for correct identifications: 6.05 for the sequential lineup and 5.56 for the simultaneous lineup for the overall group; for the subset of stranger identifications, 1.51 for sequential and 1.67 for simultaneous lineups. Translated into practical terms, this means that identification was 6.05 times as likely to be the culprit

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

rather than an innocent suspect when the sequential format was used, and 5.56 times as likely to be the culprit when the simultaneous lineup was used. .

*Confidence in sequential versus simultaneous lineups*. Overall, simultaneous lineups produced a significantly higher average level of confidence, $F$ (1, 368) = 3.83, $p$ = .05, measured at the end of just one viewing of the lineup, ($m$s = 4.62 vs. 4.39, simultaneous vs. sequential, respectively). This same effect held in the subset of witnesses who were unfamiliar with the perpetrator and the lineup members. Those who viewed a simultaneous lineup were more confident than those who viewed a sequential lineup ($m$s= 4.36 vs 3.86, simultaneous vs. sequential, respectively, $t$ (120) = 2.44, $p$ = .016, 2-tailed. For *stranger* lineups of size 0-3 (AF), mean confidence was equal between simultaneous and sequential conditions (both $m$s = 4.00).

*Same versus cross-race identifications*. Thirty-three cross-race stranger identifications were attempted, with accuracy rates not significantly different from same-race stranger identification attempts, 39% versus 37%, respectively. There was also no difference in accuracy between same and cross-race identification attempts within simultaneous versus sequential formats: 35% versus 38%, same-race simultaneous versus sequential lineups; 39% versus 40%, cross-race simultaneous versus sequential lineups.

## Discussion

Two hypotheses were tested to determine the impact of revisions to recommended lineup protocol on eyewitness decisions. The first hypothesis was supported, in that repeated viewing of a sequential lineup reduced eyewitness accuracy. This finding reinforces the Hennepin County field data and leads to a recommendation that repeated laps be allowed only with great caution. The second hypothesis—a prediction for a *dud-alternative effect*—

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

was just partially supported, as eyewitness confidence was enhanced by lineup attrition only for witnesses familiar with the perpetrator. Rather than the increase in lineup selections predicted for the simultaneous format condition, choosing rates decreased as the lineup size diminished due to familiarity, for both simultaneous and sequential lineup formats. An unexpected effect was that the choosing rate dropped significantly only for sequential lineups, a dramatic reduction such that only one of 13 witnesses made a lineup selection when post-AF lineup size was three or fewer. On the other hand, 30% of witnesses viewing a simultaneous array made lineup selections even as lineup size decreased to three or fewer, and regardless of whether the target was present or absent. These study outcomes have implications for field practice and for our understanding of witness cognitive processes, to be discussed in the final segment of this report.

One third of witness-participants were familiar with the perpetrator from encounters prior to the laboratory task, allowing an unanticipated opportunity to compare laboratory and HC field data on the variable of offender familiarity. Lab and field data show parallel effects: increased lineup selections from witnesses who are familiar with the perpetrator compared to those for whom the culprit was a stranger, resulting in higher suspect identification rates in the field and perpetrator selections in the lab. While this is not an unexpected finding in itself, it reinforces the soundness of extrapolation from lab to field settings for these new lineup procedures.

As expected from past literature (Steblay, et al., 2001) simultaneous lineups produced significantly greater witness confidence than did sequential lineups. This finding is intriguing given the lack of performance differences between the two groups and the overall low level of perpetrator identifications. The lack of decision differences between

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

sequential and simultaneous lineup performance is unexpected. A number of reasons may be advanced and explored to explain this result, among them the following four considerations.

(1) *Lack of serious attention to the task by witness-participants.* Participants appeared to seriously apply themselves to the lineup task, presumably spurred by the context of the experiment and the message of its instructions. However, it is necessary to go beyond anecdotal impressions. If witness accuracy failed to rise above the level of chance, this raises the possibility of effects due to participant carelessness or guessing. A first consideration is the pattern of filler selections. Choices of innocent lineup members in this lineup were not randomly distributed; the rate of filler photo selections ranged from 0% to 15%. This suggests at least some intention among witnesses to discern the perpetrator from among the lineup members. Beyond this, the pattern of eyewitness response falls in line with that expected for a single-suspect lineup (Wells & Turtle, 1986) and indicates witness accuracy rates that are low but above chance. For example, the individual lineup member receiving the greatest proportion of responses should be the actual target if eyewitness performance is above chance level. Fifty-nine percent of the 82 subjects who chose from the target-present lineup identified the perpetrator, an appropriately greater proportion above chance (17%), $z$ = 5.25, $p < .0001$. This pattern also was apparent in target-present *stranger* lineups, where 27% of choosers identified the perpetrator, although this was not significantly above chance level of 17%, $z = 1.11$, $p = .13$. In target-absent lineups, *none-of-the-above* responses should be more frequent than in target-present lineups, again what is expected if eyewitness performance is above chance levels. In this study, n*one-of-the-above* responses were indeed more frequent in the target-absent condition than the target-present condition, 74% vs. 57% for all subjects; although for perpetrators who were strangers, this difference did not hold,

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

66% vs. 68%. The pattern of witness response to these lineups indicates a conscientious rather than cavalier approach to what may have been a very difficult memory task. The witnesses appear to have been cautious, with approximately 2/3 making no choice from the lineup in both target-present and target-absent conditions.

(2) *Limited viewing conditions*. The study included a 10-second view of the perpetrator. The film was shot from the victim's perspective, allowing a very close range short confrontation with the offender, with his face fully in view. However, perhaps this was too short a time for solid memory encoding to occur for most subjects. Sporer (1993) noted deterioration in accuracy to close to chance levels when view of the perpetrator was limited to 5 seconds. Although the participants in this study did not demonstrate chance levels of accuracy, Sporer's experience may speak to the level of task difficulty in this study. For the witnesses who reported familiarity with the perpetrator from previous encounters, 88% identified him when he was present in the lineup (2 witnesses made no choice). For those subjects for whom the perpetrator was a stranger, the identification rate was only 9%.

(3) *Lack of high similarity between lineup members and offender*. The data from Steblay and colleagues (2001) indicate that the sequential superiority effect was particularly strong when the innocent suspect in a target-absent lineup was highly similar to the culprit. Perhaps the protection of the sequential lineup against false identification is primarily a function of lineups in which the suspect is a close match to the perpetrator. In the current study, lineup members were rated as moderately similar to the perpetrator, no high-similarity "innocent suspect" was employed, and all lineup members (including the perpetrator) were rated as moderate matches to the description. Otherwise stated, this was a lineup that by

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

structure should protect against bias, perhaps minimizing the likelihood of a visible sequential superiority effect.

(4) *Appearance change.* An offender's appearance may change across time, especially between an early mugshot and current identification task, or in the delay between crime event and apprehension. Even when the perpetrator is arrested shortly after a crime, he or she may have intentionally and significantly changed aspects of his or her appearance. Just as the offender would hope, transformation of appearance does diminish the likelihood of recognition by eyewitnesses (Shapiro & Penrod, 1986). Hair in particular is a primary descriptor reported by witnesses and used as a key marker for identification (Pozzulo & Warren, 2003). Witnesses are significantly less likely to identify the offender from a lineup when his hairstyle has changed (Pozzulo & Balfour, 2006). The perpetrator's hairstyle in the current study changed from crime event to lineup, perhaps exacerbating identification challenges for witnesses who had only a 10-second exposure to him. If appearance change hindered recognition, it seemingly did so under both simultaneous and sequential formats.

The NIJ Guide included a recommendation that all witnesses be reminded that the perpetrator's appearance may change from the time of crime to the time of lineup photo: "Instruct the witness that individuals depicted in lineup photos may not appear exactly as they did on the date of the incident because features such as head and facial hair are subject to change." (p. 32). The distinct change in the perpetrator's hairstyle between crime event and lineup in this study made an *Appearance-Change Instruction* (ACI) appealing as a reasonable attempt to provide context for the witness's identification task. However, the surprisingly low rate of witness lineup selections can generate speculation about the impact

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

of the culprit's appearance change and the likelihood of the ACI's remediation of any effect.

Interestingly, the ACI was a recommendation to law enforcement in the NIJ Guide that was not backed by a foundation of empirical research (Charman & Wells, 2007). More recently, the effectiveness of the ACI has been empirically tested once with a simultaneous lineup format; use of the ACI produced no overall benefits to identification accuracy (Charman & Wells, 2007). The authors did find positive identification results from the ACI in one condition in which the perpetrator had changed appearance quite dramatically. Perhaps this is exactly where the ACI will be influential.

The research literature also lacks a theoretical foundation that might help explain ACI operation in the current study. However, implicit in ACI use is the assumption that some correct identifications from culprit-present lineups will be lost when the offender's appearance in the lineup is not exactly as it was during the crime event (Charman & Wells, 2007). Also implicit is the assumption that the eyewitness expects a close match between the offender's appearance in the witnessed event and the lineup photo. These reasonable conjectures lead to the prediction that an ACI will urge witnesses to more carefully search for any recognizable features of the lineup members, to see beyond the appearance change, and ultimately to recognize the culprit at higher rates than will witnesses who are not provided an ACI. This prediction relies on the notion that the ACI will prompt a detailed scrutiny of lineup members that will enhance access to eyewitness memory; the witness will "dig more deeply" into his or her memory, with productive results. If this theory is accurate, the ACI may have helped to elevate recognition accuracy in the current study.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

This suggests that without the ACI, positive identifications of the perpetrator may have been even lower.

Another scenario is possible however. The obtained low rates of witness lineup selections in our current lab study suggest that the ACI may be inhibiting witness choosing. It is possible that the ACI serves only to alert the witness to the difficulty of the identification task, perhaps raising the criterion threshold for making a choice from the lineup or reducing pressure to choose. In this case, one might predict that the ACI will inhibit lineup selections, particularly in the case where appearance change is significant as is likely in this study. This circumstance suggests that the ACI does not improve access to memory, but only affects witness motivation to make a selection from the lineup. Choosing will be inhibited, with parallel effects in target-present and absent conditions.

Finally, there is a third possibility (Charman & Wells, 2007). Perhaps the ACI only affects witnesses with poor memory, prompting them to choose. This would generate more choosing as they allow substantial discrepancy between memory and suspect photo. In practical terms, this scenario would increase choosing rates and severely diminish witness performance.

Testing of the impact of the ACI is currently underway in our lab, however the data are not yet available to help ascertain the exact reasons for witness performance in this study. Regardless of the fact of and reason for a lack of expected sequential-simultaneous difference in witness performance, this study clearly accomplished its original objectives. The data demonstrate the impact of a witness's second viewing of the lineup. The study also answered the question of how reduced lineup size—attrition due to familiarity—can affect witness response. The study points out the potential danger to an innocent suspect

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

when a witness repeats the sequential lineup or when lineup size is reduced within a simultaneous format lineup. In summary, the laboratory portion of this work successfully lends empirical information for effective field practice.

## General Discussion

The objective of this set of studies was to provide useful information -- practical, empirical, and theoretical – to bridge laboratory research with field practice.

The successful implementation of double-blind sequential lineups in Hennepin County provides a strong model for jurisdictions across the country for reform of lineup practice. As documented above, the Hennepin County experience generated a list of necessary considerations and realistic solutions to concerns that arise as the preferred protocol is translated to field practice. Equally useful is the quantitative product of the pilot program—a descriptive summary of witness decisions and the conditions under which they occurred. The HC pilot has provided the first available baseline summary of double-blind sequential lineup performance under controlled conditions in the field. Also, as other jurisdictions look to assess lineup reform, this pilot project offers recommendations for designing effective field protocol and appropriate interpretation of field data. A training DVD produced by the HC Attorney's Office is available for other jurisdictions, helping ease the changes and costs to these departments. These lessons are essential to inform practice and public policy.

This project's joining of field practice and laboratory testing generated new and timely knowledge about lineup construction and protocol. The rapid application of scientific research to practice has placed lineup researchers in the perhaps enviable position of being

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

called upon to answer practical and important questions. For example, a recent writer has asked: What happens when the witness is permitted to view the sequential lineups a second time? (Diamond, in press). The practice of repeated witness viewing of sequential lineups was found to boost error rates in both lab and field. Caution is strongly advised when this procedure is used in the field, particularly for witnesses who complete the first viewing of the lineup without voicing recognition of any lineup member.

The importance of presenting a full 6-person lineup also was underscored by results of the laboratory study. A phenomenon that may occur in practice—attrition of lineup size due to the witness's familiarity with lineup foils—was found to boost errors for witnesses who viewed a simultaneous target-absent lineup. This pattern was not apparent for sequential lineups, suggesting that the sequential format may offer some protection against attrition in lineup size when it occurs under these circumstances. However, this is not to suggest that use of sequential lineup negates the need for a full lineup.

An unanticipated extension to the original research plan also provides a model for future field tests. Mock witness procedures previously have been employed to examine the quality of lineup fillers for individual lineups. This project was the first to develop and employ the mock witness test for the purpose of assessing overall lineup quality in the jurisdiction of interest. At the same time, the mock witness procedure provided necessary information to more confidently interpret the Hennepin County field outcomes.

Along with data on revisions to lineup structure and procedure, the laboratory segment of this project provided the first available lab data on witness response to a perpetrator familiar to the witness from a previous context. As with the HC field data,

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

reasonable patterns of witness response suggest that the sequential protocol is effective for accurate identification of both known and stranger offenders.

This report would be remiss if it did not also point to specific areas for future research collaboration. Most salient is the pending challenge and opportunity of computer technology for efficient and effective lineup delivery. Adaptation of lineup construction and procedure using electronic photo repositories and laptop formats presents empirical questions that can be usefully subjected to laboratory evaluation. Similarly, creative innovations (e.g., the envelope procedure and the battleship laptop position) as well as currently accepted "fixes" such as the Appearance Change Instruction may benefit from further scrutiny and refinement. A somewhat more amorphous suggestion for future research is in the evaluation of witness comments. The range of witness lineup responses—from immediate absolute certainty to the qualified, slow, and tentative decision—presents field data that may inspire laboratory research. Are witness comments diagnostic of decision process or accuracy, indicative of real or false confidence, differentially produced by specific lineup procedures or added laps, or likely to affect an investigator's judgment of witness veracity? These explorations demand a continuing dynamic dialogue between lab and field.

*Theoretical implications*

At the same time that practical experience should push the research agenda in new directions, the touchstone of science demands the grounding of new knowledge in empirical investigation and sound theory. These data offer information regarding the *relative judgment* principles that underlie our understanding of eyewitness decisions.

Surprisingly, there was no difference in lineup accuracy between the simultaneous and sequential formats in this study. It is difficult to know the reasons for this unexpected

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

outcome: A very short encoding opportunity, the perpetrator's appearance change between event and lineup, and specific instructions for caution each may have contributed to the seemingly hesitant decisions of the witnesses. It may be that these conditions are those that minimize the likelihood of sequential superiority. However, it is fascinating that even under these apparently constrained conditions, witnesses who faced a simultaneous lineup were more likely than those with a sequential format to choose from the array when they saw *duds* in the lineup. The attrition of the lineup due to filler familiarity did not deter a lineup choice for these witnesses even in the face of a target-absent lineup. This choosing from a narrowed set of photos suggests relative judgment at work. Witnesses in the sequential lineup who could rule out several faces (one at a time, of course) appeared to rely more on absolute judgment, continuing to work through the lineup looking for a match to memory beyond the duds.

An unexpected benefit of sequential lineup delivery can be appreciated when one views the *lap* data. The traditional simultaneous lineup format does not allow us to know the level of comparison shopping (relative judgment) employed by the witness prior to the lineup decision. In contrast, the sequential lineup with a repetition option has revealed an objective indicator of eyewitness laps through the lineup. The effect of relative judgment was evidenced in both field and laboratory as witnesses engaged in additional laps of the sequential lineup. The lab demonstrated that greater choosing in a second (or third) viewing helped to secure a handful of positive identifications but at the expense of four times as many identification errors. The diagnosticity of identification dropped from 6.05 to 4.57 after a repeated viewing of the lineup. The sequential lineup was more effective without repeated viewing.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

A concern of the police investigators, that jump-out identifications may be sacrificed with the sequential format, did not appear to be the case. Jump-outs occurred at a relatively high level, particularly for instances of familiar perpetrators. Jump-outs may be the prototype of absolute recognition. If so, we would not expect a reduction in jump-outs from a sequential lineup, the sequential lineup being a better spur to absolute judgment than the traditional form. Jump-out identifications in the first viewing also suggested that absolute judgments were common in the field (55% of witnesses choosing).

*Implications for the Future*

This convergent evidence from field experience and laboratory trials offers unprecedented opportunity for an increased understanding of eyewitness decision-making processes and the means to achieve more effective police lineup outcomes. Although some of the lessons may apply more narrowly to Hennepin County's unique local conditions and logistical circumstances, it is anticipated that the central research outcomes will be informative across jurisdictions. The laboratory research questions, while originating from local experience, were selected for exploration specifically because of their likely interest and relevance to the wider law enforcement and research communities

A next generation of research must continue to effectively join theory and research with practice, particularly to address disruptions in recommended protocol that may (or may not) affect eyewitness decisions and accuracy. Diamond (in press) speaks of benefits to learning "when well-documented field investigations are combined with laboratory backup." She specifically cited the HC test of filler quality– "applying laboratory procedures to test the hypothesis that the lineup construction rather than the memory of the eyewitness produced the identification." (p. 13). Assistant Hennepin County Attorney Scoggin has

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

forcefully stated, "We in the law enforcement arena cannot help but look over our shoulders at a time when DNA exoneration cases are shaking confidence in the criminal justice system. We welcome objective research that suggests improvements in the identification process." (2003, p. 1). Researchers must move forward swiftly to address this compelling need.

Eyewitness research has been recognized as one of the most successful collaborations between psychology and the legal system (see, e.g., Doyle, 2005). More recently, Doyle and colleagues (2006) urge street investigators, laboratory scientists and courtroom litigators to take responsibility for integrating science into practice and to combine their perspectives into a productive working consensus for action informed by science. The translation of knowledge from the laboratory to field must be informed by scientific expertise at the same time that it is enriched by those who have a textured appreciation for the circumstances in which lineups are performed. One of the most powerful aspects of this research project is in its collaboration among professional communities, a model for the bridging of research and practice.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

Table 1.

Descriptive data of the Hennepin County Pilot Project

| | Population | 280 Lineups | 117 Cases | 206 Eyewitnesses |
|---|---|---|---|---|
| **Minneapolis** | 382,618 | 138 (49%) | 38 | 89 |
| **Bloomington** | 85,172 | 86 (31%) | 48 | 69 |
| **Minnetonka** | 51,301 | 30 (11%) | 14 | 26 |
| **New Hope** | 20,873 | 26 (9%) | 17 | 22 |

**Results of 280 Lineups**

| | | | |
|---|---|---|---|
| **Most Frequent Crimes (of 27 Categories):** | Murder | | 30% |
| | Assault | | 24% |
| | Theft | | 12% |
| | Forgery/Check | | 8% |
| **Suspect Race:** | African American | 163 | 58% |
| | Caucasian | 75 | 27% |
| | Hispanic | 16 | 6% |
| | Native American | 8 | 3% |
| | Other | 6 | 3% |
| | No Report | 12 | 4% |
| **Witness Race:** | African American | 77 | 28% |
| | Caucasian | 63 | 22% |
| | Native American | 8 | 3% |
| | Hispanic | 5 | 2% |
| | Other | 5 | 2% |
| | No Report | 122 | 44% |
| | Cross-race IDs | 38 | 14% |
| | Same-race IDs | 113 | 40% |
| | No information | 129 | 46% |

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

| | | | |
|---|---|---|---|
| **Suspect gender** | Male | 249 | 89% |
| | Female | 30 | 11% |
| **Witness gender** | Male | 181 | 65% |
| | Female | 96 | 34% |
| | No report | 3 | 1% |
| **Weapon presence** | Gun | 90 | 32% |
| | Knife | 16 | 6% |
| | Other | 13 | 5% |
| | No weapon | 14 | 5% |
| | No report | 147 | 53% |

| **Time between event and lineup** | | Cum % |
|---|---|---|
| | Lineup within 1 week: | 50% |
| | within 2 weeks: | 64% |
| | within 3 weeks: | 75% |
| | within 4 weeks: | 82% |

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

Table 2

Instructions to Investigators (from Scoggin 2003)

---

- Use existing Minnesota Repository of Arrest Photos parameters. These defaults include the use of photographs depicting suspects of similar age, skin color, complexion, hairstyle, and build. Consistency is also required as to backdrop, the use of color or black and white suspect photos, and distinguishing characteristics such as facial hair, scars, eyeglasses, and clothing.
- Use no less than six photographs. The suspect's photo should be randomly placed in the array.
- Preserve a copy of the photos in the order in which they were displayed. One way is to preserve the traditional simultaneous six-photo display.
- Assemble a different group of photos using new fillers for each suspect.
- Interview witnesses in private, separate from other witnesses.
- Do not tell the witness that the suspect is in a group of photos. Rather, the witness should be told the suspect "may or may not be" in the group of photos displayed.
- Tell the witness that the displaying officer does not know whether the suspect is in the group of photos.
- If a witness is able to recognize the suspect from the photos, a statement from that witness should include a description of how certain the witness is of the identification. Numerical certainty (percentages) should be avoided, but a description of why the photo resembles the suspect is encouraged. The witness should initial and date any photo identified.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

- The officer displaying the photographs should report on how the identification was made, including the speed of the identification, statements of certainty made during the process, and any comments about why the photos do or do not look like the suspect. The officer should not encourage the witness to focus on any particular photo.
- Photos should be shown one at a time. While one photograph is being displayed, the other photographs should be face down or otherwise hidden.
- The witnesses may look through the photos more than once, but all the photos should be shown each time. The number of times the photos were shown should be reported. The witness may take as long as necessary to examine each photograph.
- If a witness identifies a suspect before looking at all the photos, the rest of the display should be shown and the witness asked to identify or eliminate each photograph.
- The officer showing the display should not know which photo depicts the suspect.
- The officer assembling the photos should not be in the witness's view during the display.
- A knowledgeable officer should be available to clarify questions that arise during the identification process and to provide support after the process is completed.
- Exceptions:
    - Sequential displays should not be used with witnesses of twelve years of age or younger.
    - The blind examination requirement may be disregarded if necessary. Officers should document why an uninformed officer was not available

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

(*e.g.*, it is 3:00 a.m. and no uninformed officer is available). Reports should also include why sequential identifications are not possible.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

Table 3.

Eyewitness Performance

| | | | | |
|---|---|---|---|---|
| **Hennepin County (HC) Results** | | | | |
| | **HC** | SIM (Field)** | Sim (Field)*** | SIM(Field)**** |
| **Suspect ID** | 54% | 50% | 52% | 40% |
| **Filler ID** | 8% | 24% | 15% | 20% |
| **No Choice** | 38% | 26% | 33% | 40% |
| **In the laboratory*** | | | | |
| | Simultaneous Lineups | | Sequential Lineups | |
| | Perpetrator Present | Perpetrator absent | Perpetrator present | Perpetrator absent |
| Perpetrator ID | 50% | | 35% | |
| Filler ID | 24% | 51% | 19% | 28% |
| No Choice | 26% | 49% | 46% | 72% |

Notes to table:

* Steblay et al., (2001)
** Behrman, & Davey, (2001).
*** Behrman & Richards (2005)
**** Valentine, Picking, & Darling (2003)

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

Table 4.

Witness Decisions for repeated viewing of the Sequential Lineup

---

All witnesses [Reporting lineups = 128]

| **Laps** | Lineups (n) | Suspect ID | Filler ID | No Choice |
|---|---|---|---|---|
| 1 | 68 | 66% | 3% | 31% |
| 2 | 42 | 50% | 10% | 40% |
| 3 | 14 | 50% | 14% | 36% |
| 4, 5 or 6 | 4 | 25% | 75% | |

*Stranger* crimes only [Reporting lineups = 78]

| Laps | Lineups (n) | Suspect ID | Filler ID | No Choice |
|---|---|---|---|---|
| 1 | 33 | 42% | 3% | 55% |
| 2 | 31 | 32% | 13% | 55% |
| 3 or more | 14 | 43% | 29% | 29% |

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

Table 5.

Eyewitness Response: Stranger versus Familiar Perpetrator

In the Field: Hennepin County

| | Stranger Perpetrator (n = 178) | Familiar Perpetrator (n = 93) |
|---|---|---|
| Suspect ID | 35 % | 90 % |
| Filler | 11 % | 3 % |
| No Choice | 53 % | 6 % |

In the Lab: Sequential format, target present, final decisions

| | Stranger Perpetrator (n =66) | Familiar Perpetrator (n = 35) |
|---|---|---|
| Accurate ID | 14 % | 66 % |
| Filler | 39 % | 11 % |
| No Choice | 47 % | 23 % |

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

Table 6.

Opportunity to view perpetrator

| | | |
|---|---|---|
| **STRANGER IDENTIFICATIONS** | | |
| **Very Brief Interaction (157 Lineups)** | | |
| **Eyewitness Decisions**: | 50 Suspect | 32% |
| | 18 Filler | 11% |
| | 89 No Choice | 57% |
| **Choosing Rate** | | 43% |
| **Jump-outs** | | 12% |
| **Reported qualifiers to the choice** | | 29 of 68 (43%) |
| **Reported qualifiers about other lineup members** | | 28 of 157 (18%) |
| **Eyewitness status**: | Observer | 68% |
| | Victim | 27% |
| | Other knowledge | 4% |
| **Weapon involved** (reported): | | 29% |
| **Type of crime**: (categories > 8%) | Assault | 31% |
| | Theft | 17% |
| | Murder | 15% |
| | Forgery | 10% |
| | Burglary | 10% |
| **Longer Interaction (22 Lineups)** | | |
| **Eyewitness Decisions**: | 13 Suspect | 59% |
| | 3 Filler | 14% |
| | 6 No Choice | 27% |
| **Choosing Rate** | | 73% |
| **Jump-outs** | | 32% |
| **Reported qualifiers to the choice** | | 6 of 16 (38%) |
| **Reported qualifiers about other lineup members** | | 4 of 22 (18%) |

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

| | | |
|---|---|---|
| **Eyewitness status**: | Observer | 67% |
| | Victim | 33% |
| **Weapon involved** (reported): | | 9% |
| **Type of crime**: (categories > 8%) | Fraud | 23% |
| | Assault | 14% |
| | Forgery | 9% |
| | Credit Fraud | 9% |
| | Theft/swindle | 9% |
| | Robbery | 9% |
| | Theft | 9% |

**FAMILIAR PERPETRATOR IDENTIFICATIONS**

**"Regular Customer"/Multiple Views (45 Lineups)**

| | | |
|---|---|---|
| **Eyewitness Decisions**: | 38 Suspect | 84% |
| | 3 Filler | 7% |
| | 4 No Choice | 9% |
| **Choosing Rate** | | 91% |
| **Jump-outs** | | 60% |
| **Reported qualifiers to the choice** | | 12 of 41 (29%) |
| **Reported qualifiers about other lineup members** | | 4 of 45 (9%) |
| **Eyewitness status**: | Observer | 62% |
| | Victim | 33% |
| | Other | 2% |
| **Weapon involved** (reported): | | 60% |
| **Type of crime**: (categories > 8%) | Murder | 42% |
| | Assault | 24% |
| | Theft | 9% |

**Know Well (including gang associations) (48 Lineups)**

| | | |
|---|---|---|
| **Eyewitness Decisions**: | 46 Suspect | 96% |
| | 2 No Choice | 4% |
| **Choosing Rate** | | 96% |
| **Jump-outs** | | 90% |
| **Reported qualifiers to the choice** | | 1 of 46 (2%) |

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

| | | |
|---|---|---|
| **Reported qualifiers about other lineup members** | | 5 of 48 (10%) |
| **Eyewitness status**: | Observer | 44% |
| | Victim | 31% |
| | Other | 25% |
| **Weapon involved** (reported): | | 81% |
| **Type of crime**: (categories > 8%) | Murder | 71% |
| | Assault | 19% |

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

Table 7

Eyewitness decisions in the laboratory: all participant-witnesses

Overall N=372

TARGET PRESENT

| | Sim | Seq1 | SeqFinal | SeqHold | Seq+ |
|---|---|---|---|---|---|
| Correct ID | 25% | 26% | 32% | 40% | 24% |
| | 22 | 26 | 32 | 19 | 13 |
| Filler ID (error) | 17% | 20% | 30% | 21% | 37% |
| | 15 | 20 | 30 | 10 | 20 |
| No choice (error) | 58% | 55% | 39% | 38% | 39% |
| ` | 52 | 55 | 39 | 18 | 21 |
| Choosing rate | 42% | 46% | 62% | 61% | 63% |
| N | 89 | 101 | 101 | 47 | 54 |

TARGET ABSENT

| | Sim | Seq1 | SeqFinal | SeqHold | Seq+ |
|---|---|---|---|---|---|
| No choice (correct) | 73% | 74% | 58% | 64% | 54% |
| | 59 | 75 | 59 | 30 | 29 |
| Filler ID (error) | 27% | 26% | 42% | 36% | 46% |
| | 22 | 26 | 42 | 17 | 25 |
| Choosing rate | 27% | 26% | 42% | 36% | 46% |
| N | 81 | 101 | 101 | 47 | 54 |

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

Table 8

Eyewitness Decisions in the laboratory: *stranger* perpetrators only

N= 253 (68% of 372 witnesses)

TARGET PRESENT

| | Sim | Seq1 | SeqFinal | SeqHold | Seq+ |
|---|---|---|---|---|---|
| Correct ID | 10%<br>6 | 8%<br>5 | 14%<br>9 | 15%<br>4 | 13%<br>5 |
| Filler ID (error) | 23%<br>14 | 26%<br>17 | 39%<br>26 | 37%<br>10 | 41%<br>16 |
| No choice (error) | 68%<br>42 | 67%<br>44 | 47%<br>31 | 48%<br>13 | 46%<br>18 |
| Choosing rate | 33% | 34% | 53% | 52% | 54% |
| N | 62 | 66 | 66 | 27 | 39 |

TARGET ABSENT

| | Sim | Seq1 | SeqFinal | SeqHold | Seq+ |
|---|---|---|---|---|---|
| No choice (correct) | 64%<br>36 | 68%<br>47 | 45%<br>31 | 44%<br>11 | 45%<br>20 |
| Filler ID (error) | 36%<br>20 | 32%<br>22 | 55%<br>38 | 56%<br>14 | 55%<br>24 |
| Choosing rate | 36% | 32% | 55% | 56% | 55% |
| N | 56 | 69 | 69 | 25 | 44 |

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

Table 9

Eyewitness decisions in the laboratory: familiar perpetrators only

N= 119

TARGET PRESENT

| | Sim | Seq1 | SeqFinal |
|---|---|---|---|
| Correct ID | 59% | 60% | 66% |
| | 16 | 21 | 23 |
| Filler ID (error) | 4% | 9% | 11% |
| | 1 | 3 | 4 |
| No choice (error) | 37% | 31% | 23% |
| | 10 | 11 | 8 |
| Choosing rate | 63% | 69% | 77% |
| N | 27 | 35 | 35 |

TARGET ABSENT

| | Sim | Seq1 | SeqFinal |
|---|---|---|---|
| No choice (correct) | 92% | 88% | 88% |
| | 23 | 28 | 28 |
| Filler ID (error) | 8% | 13% | 13% |
| | 2 | 4 | 4 |
| Choosing rate | 8% | 13% | 13% |
| N | 25 | 32 | 32 |

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

Table 10

Eyewitness decisions: Lineup size adjusted for attrition due to familiarity (AF)

(Subset of witnesses for whom the perpetrators was a stranger)

| | Simultaneous | | | Sequential | | |
|---|---|---|---|---|---|---|
| Lineup size | Choosing | | Accuracy | Choosing | | Accuracy |
| Overall | | (n) | | | (n) | |
| 6 (full) | 40% | (53) | 32% | 38% | (69) | 36% |
| 4-5 | 29% | (45) | 36% | 32% | (53) | 38% |
| 0-3 | 30% | (20) | 45% | 8% | (13) | 54% |
| Target-present | | | | | | |
| 6 (full) | 38% | (29) | 10% | 34% | (32) | 9% |
| 4-5 | 26% | (23) | 4% | 38% | (29) | 7% |
| 0-3 | 30% | (10) | 20% | 0% | (5) | 0% |
| Target-absent | | | | | | |
| 6 (full) | 42% | (24) | 58% | 41% | (37) | 59% |
| 4-5 | 32% | (22) | 68% | 25% | (24) | 75% |
| 0-3 | 30% | (10) | 70% | 13% | (8) | 88% |

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

Footnotes

1. Structural elements of the process (sequential format, suspect position in the lineup, blind administration) were reported conscientiously, while communication elements (cautionary instruction, blind instruction, and explanation of the sequential procedure for the witness) were less often documented. Witness responses beyond choice were less frequently cited (eyewitness confidence, qualifiers, number of repetitions of the lineup). The nuances of "no choice" responses ("not there" vs. "don't know") were not required or reported.

2. Hennepin County's procedure has been wrongly portrayed in the recent Mecklenburg report of the Illinois pilot study. Contrary to Mecklenburg's claim, there was not an instruction to the witness to hold his/her responses until the end of the array. The Mecklenburg report, titled "Report to the Legislature of the State of Illinois: The Illinois Pilot Program on Sequential Double-Blind Identification Procedures" is available at: http://www.chicagopolice.org/IL%20Pilot%20on%20Eyewitness%20ID.pdf.

3. Note that in this discussion "choosing" includes any pick from the lineup, suspect or filler. "No choice" indicates that the witness did not pick any photo from the lineup.

4. Alpha level for all statistical tests was set at .05.

5. Thanks are due to the many student research assistants involved with data collection in Studies 2 and 3; Special thanks to Hannah Dietrich, Miranda Nelson, and Shannon Ryan.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

References

Behrman, B. W., & Davey, S.L. (2001). Eyewitness identification in actual criminal cases: An archival analysis. *Law & Human Behavior, 25*, 475-491.

Behrman, B. W., & Richards, R.E. (2005). Suspect/foil identification in actual crimes and in the laboratory: A reality monitoring analysis. *Law and Human Behavior,* 29, 279-301.

Brigham, J. C., Meissner, C.A., & Wasserman, A.W. (1999). Applied issues in the construction and expert assessment of photo lineups. *Applied Cognitive Psychology*, S73-S92.

Charman, S. D., & Wells, G.L. (2007). Eyewitness lineups: Is the appearance -change instruction a good idea?" *Law and Human Behavior, 31,* 3-22.

Clark, S. E., & Davey, S.L. (2005). The target-to-foils shift in simultaneous and sequential lineups," *Law and Human Behavior*, 29, 151-172.

Cutler, B. L., & Penrod, S.D. (1988). Improving the reliability of eyewitness identification: Lineup construction and presentation," *Journal of Applied Psychology*, 73, 281-290.

Diamond, S. (in press). Psychological contributors to evaluating witness testimony. In E. Borgida & S. Fiske (Eds.), *Psychological Science in Court*. Blackwell.

Douglass, A. (nee Bradfield), Smith, C., & Fraser-Thill, R. (in press). A problem with double-blind photospread procedures: Photospread administrators use one eyewitness's confidence to influence the identification of another eyewitness," *Law and Human Behavior.*

Doob, A. N., & Kirshenbaum, H.M. (1973). Bias in police lineups – Partial remembering," *Journal of Police Science and Administration,* 1 (3), 287-293.

Douglass, A. (nee Bradfield) & Steblay, N. (in press). Memory distortion in eyewitnesses.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

A meta-analysis of the post-identification feedback effect. *Journal of Applied Cognitive Psychology*.

Doyle, J. (2005). *True Witness: Cops, Courts, Science and the Battle Against Misidentification.*, New York: Palgrave Macmillan.

Doyle, J. M., Penrod, S., Kovera, M.B., & Dysart, J. (2006). The street, the lab, the courtroom, the meeting room. Unpublished manuscript.

Greene, E. (1988). Judge's instructions on eyewitness testimony: Evaluation and revision. *Journal of Applied Social Psychology, 18,* 252-276.

Harris, M. J., & Rosenthal, R. (1985). Mediation of interpersonal expectancy effects: 31 meta-analyses. *Psychological Bulletin*, 97, 363-386

Haw, R. & Fisher, R.P. (2004).Effects of administrator-witness contact on eyewitness identification accuracy. *Journal of Applied Psychology*, 89, 1106-1112.

Klobuchar, A. (2004). *Year 2004 Goals. A Publication of the Hennepin County Attorney's Office.*

Klobuchar, A., & Knight, S. (2005) New lineup procedures can reduce eyewitness mistakes. *Minneapolis Star Tribune*, (Jan 12): 11A.

Klobuchar, A., Steblay, N.K.M., & Caligiuri, H.L. (2006). Improving eyewitness identifications: Hennepin County's blind sequential lineup pilot project," Cardozo *Public Law, Policy, and Ethics Journal*, 2, 381-414.

Lindsay, R.C.L., Lea, J.A., Nosworthy, G.J., Fulford, J.A., Hector, J., LeVan, V., & Seabrook, C. (1991). Biased lineups: Sequential presentation reduces the problem. *Journal of Applied Psychology, 76 (6),* 796-802.

Lindsay, R.C.L., Smith, S.M., & Pryke, S. (1999). Measures of lineup fairness: Do they

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

postdict identification accuracy?" *Applied Cognitive Psychology* 13 (1999).

Lindsay, R.C.L., & Wells, G.L. (1985). Improving eyewitness identifications from lineups: Simultaneous versus sequential presentation. *Journal of Applied Psychology, 70,* 556-561.

Malpass, R. S. (1981). Effective size and defendant bias in eyewitness identification lineups. *Law and Human Behavior,* 5 (4), 299-309.

Malpass, R. S., & Lindsay, R.C.L. (1999). Measuring lineup fairness," *Applied Cognitive Psychology*, 13, 1-7.

Mason v. Baithwaite 432 U.S. 98, 114 (1977)

McQuiston-Surrett, D., Malpass, R.S., & Tredoux, C.G. (in press). Sequential vs. simultaneous lineups: A review of methods, data, and theory. *Psychology, Public Policy, and Law*.

Mecklenburg, S. (2006). Report to the Legislature of the State of Illinois: the Illinois pilot program on sequential double-blind identification procedures. Retrieved August 2006 from www.chicagopolice.org.

Meissner, C.A., & Brigham, J.C. (2001). Thirty years of investigating the own-race bias in memory for faces: A meta-analytic review," *Psychology, Public Policy, & Law* 7, 3-35.

Neil v. Biggers 409 U.S. 188, 199 (1972).

National Institute of Justice, October, NCJ 178240.

North Carolina Actual Innocence Commission. (2003). Recommendations for Eyewitness Identification 1-6.

Northampton Police Department (2005). Administration & Operations Manual; Eyewitness Identification Procedure. (Visited September 1, 2006) available at

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

http://www.innocenceproject.org/docs/Northampton_MA_ID_Protocols.pdf.

O'Toole, T. P. (2006). What's the matter with Illinois? How an opportunity was squandered to conduct an important study on eyewitness identification procedures. *The Champion* (August), 18-23.

Patenaude, K. (2006). Police identification procedures: A time for change. *Cardozo Public Law, Policy, and Ethics Journal*, 2, 415-419.

Penrod, S. (2003). Eyewitness identification evidence: How well are witnesses and police performing? *Criminal Justice Magazine*, *54*, 36-47.

Phillips, M. R., McAuliff, BD., Kovera, M.B. & Cutler, B.L. (1999). Double-blind photoarray administration as a safeguard against investigator bias. *Journal of Applied Psychology*, 84, 940-951.

Police Chief's Association of Santa Clara County. (2002). Lineup Protocol for Law Enforcement. Available at http://www.innocenceproject.org/docs/Santa_Clara_Lineup_Protocols.pdf.

Pozzulo, J. D., & Balfour, J. (2006). Children and adults' eyewitness identification accuracy when a culprit changes his appearance: Comparing simultaneous and elimination lineup procedures. *Legal and Criminological Psychology*, 11, 25-34;

Pozzulo, J. D., & Warren, K.L. (2003). Descriptions and identifications of strangers by youth and adult eyewitnesses. *Journal of Applied Psychology*, 84, 167-176.

Rattner, A. (1988). Convicted but innocent: Wrongful conviction and the criminal justice system. *Law and Human Behavior*, *12*, 289-293.

Report of the Governor's Commission on Capital Punishment (2002), 31-40. Retrieved September 17, 2006 from

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

http://www.idoc.state.il.us/ccp/ccp/reports/commission_report/index.html.

Rosenthal, R. (2002). Covert communication in classrooms, clinics, courtrooms, and cubicles. *American Psychologist*, 57, 834-849.

Rosenthal, R., & Rubin, D.B. (1978). Interpersonal expectancy effects: The first 345 studies. *Behavioral and Brain Sciences*, 3, 377-386

Scoggin, P. (2003). Pilot Program for the Sequential Identification Process," 1 (October 27) Memorandum, Hennepin County Attorney's Office, 1-3.

Scoggin, P. (2004). Personal communication, March 29.

Scoggin, P. (2005). The usual suspects: A pilot project to improve eyewitness identifications from lineups. Hennepin County report, 1-5.

Scoggin, P. (2005). Sequential identification, revised protocol. Hennepin County report (May 19), 1-4.

Shapiro, P.N., & Penrod, S. (1986). Meta-analysis of facial identification studies. *Psychological Bulletin*, 100, 139-156.

Simmons v. United States. 390 U.S. 377, 384 (1968).

Sporer, S. (1993). Eyewitness identification accuracy, confidence, and decision times in simultaneous and sequential lineups. *Journal of Applied Psychology*, 78(1), 22-33.

Sporor, S., Penrod, S., Read, J.D., & Cutler, B. (1995). Choosing, confidence, and accuracy: A meta-analysis of the confidence-accuracy relation in eyewitness identification studies. *Psychological Bulletin*, 118, 315-327.

State of New Jersey.. (2002). Attorney General guidelines for preparing and conducting photo and live lineup identification procedures. *State of Illinois, Report of the Governor's Commission on Capital Punishment* i (Apr 15), 31-40.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

State of Wisconsin Office of the Attorney General. (2005). Eyewitness identification procedure recommendations. *Model Policy and Procedure for Eyewitness Identification*. (April).

State of Wisconsin Office of the Attorney General. (2006, July 21). Response to Chicago Report on Eyewitness identification Procedures. Wis. Act 60, 17 (to be codified as Wis. Stat 175.50(2), 1-4.

Steblay, N. (1997). Social influence in eyewitness recall: A meta-analytic review of lineup instruction effects," *Law and Human Behavior*, 21, 283-297.

Steblay, N. (2006). Observations on the Illinois data. Available at http://www.augsburg.edu/psychology/steblay.html.

Steblay, N., Dysart, J., Fulero, S., & Lindsay, R.C.L.. (2001). Eyewitness accuracy rates in sequential and simultaneous lineup presentations: A meta-analytic comparison. *Law and Human Behavior*, 25, 459-473.

Stovall v. Denno, 388 U.S. 301-302 (1967).

Technical Working Group for Eyewitness Accuracy. (1999). *Eyewitness Evidence: A Guide for Law Enforcement*, Research Report, Washington, DC: U.S. Department of Justice.

The Innocence Project: Mistaken I.D., Retrieved August 31, 2006 from http://www.innocenceproject.org/causes/mistakenid.php

The Innocence Project Retrieved July 2006 from www.innocenceproject.org.

United States v. Ash 413 U.S. 300, 321 (1973).

U.S. v. Wade 388 U.S. 224-225 (1967).

Valentine, T., & Heaton, P. (1999). An evaluation of the fairness of police lineups and video identifications. *Applied Cognitive Psychology*, 13, S59-S72.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

Valentine, T., Pickering, A., & Darling, S. (2003). Characteristics of eyewitness identification that predict the outcome of real lineups. *Applied Cognitive Psychology, 17*, 969-993.

Virginia State Crime Commission. (2005). Report of the Virginia State Crime Commission on Mistaken Eyewitness Identification to the Governor and the General Assembly of Virginia, House Document No. 40 1, 14-15.

Wells, G. L. (1984). The psychology of lineup identifications. *Journal of Applied Social Psychology, 36*, 1546-1557.

Wells, G.L. (1988). *Eyewitness Identification: A System Handbook*. Toronto: Carswell Legal Publications.

Wells, G. L. (1993). What do we know about eyewitness identification? *American Psychologist, 48*, 553-571.

Wells, G. L. (2006a). Does the sequential lineup reduce accurate identifications in addition to reducing mistaken identifications? Document retrieved from www.psychology.iastate.edu/faculty/gwells/SequentialNotesonlossofhits.htm.

Wells, G. L. (2006b). An important note on field studies of eyewitness identifications from lineups: Filler identifications are "conditional proxy measures". Draft document available at http://www.psychology.iastate.edu/faculty/gwells

Wells, G.L., & Bradfield, A. (1998). 'Good, you identified the suspect': Feedback to eyewitnesses distorts their reports of the witnessing experience. *Journal of Applied Psychology, 83*, 360-376.

Wells, G. L., & Bradfield, A.L. (1999). Measuring the goodness of lineups: Parameter estimation, question effects, and limits to the mock witness paradigm," *Applied*

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

*Cognitive Psychology*, 13, S27-S39.

Wells, G. L., Leippe, M.R., & Ostrom, T.M. (1980). Guidelines for empirically assessing the fairness of a lineup. *Law and Human Behavior,* 3 (4), 285-292.

Wells, G. L., Luus, C.A.E., & Windschitl, P. (1994). Maximizing the utility of eyewitness identification evidence. *Current Directions in Psychological Science,* 3(6), 194-197.

Wells, G.L., Malpass, R.S., Lindsay, R.C.L., Fisher, R. P., Turtle, J. W., & Fulero, S. M. (2000). From the lab to the police station: A successful application of eyewitness research," *American Psychologist*, *55*, 581-598.

Wells, G. L., & Olson, E. (2002). Eyewitness identification: Information gain from incriminating and exonerating behaviors. *Journal of Experimental Psychology: Applied, 8 (3),* 155-167.

Wells, G. L., & Olson, E.A. (2003). Eyewitness testimony, *Annual Review of Psychology* 54, 277-295.

Wells, G. L., & Seelau, E. P, (1995). Eyewitness identification: Psychological research and legal policy on lineups. *Psychology, Public Policy and Law*, 1, 776-778.

Wells, G. L., Small, M., Penrod, S., Malpass, R.S., Fulero, S.M., & Brimacombe, C.A.E. (1998). Eyewitness identification procedures: Recommendations for lineups and photospreads. *Law and Human Behavior, 22,* 603-647.

Wells, G. L., & Turtle, J. (1986). Eyewitness identification: The importance of lineup models. *Psychological Bulletin, 99,* 320-329.

Windschitl, P.D., & Chambers, J.R. (2004). The dud-alternative effect in likelihood judgment. *Journal of Experimental Psychology: Learning, Memory, and Cognition,* 30 (1), 198-215.

This document is a research report submitted to the U.S. Department of Justice. This report has not been published by the Department. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.