Volume 48, Issues 1-2

Court Review

THE JOURNAL OF THE AMERICAN JUDGES ASSOCIATION

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Court Review

THE JOURNAL OF THE AMERICAN JUDGES ASSOCIATION

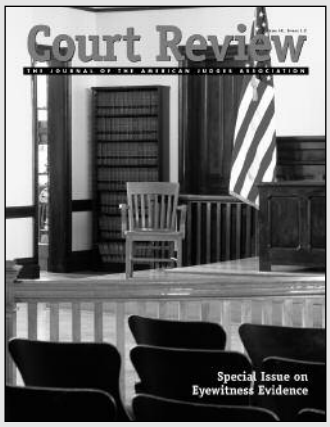
Volume 48, Issues 1-2 2012

EDITOR'S NOTE

This special issue on eyewitness identification includes some of the world's premier researchers and commentators, along with some of their best students. The six articles provide judges with easy-to-understand, state-of-the-art information on various social-science perspectives relevant to eyewitness identification tailored to a judicial readership.

In his introductory article, James Doyle provides judges with an argument for why you should care about what social scientists have documented in their research. It is followed by an article by Laura Smalarz and Gary Wells that reviews eyewitness research, focusing on mistaken identifications and false certainty by witnesses. Their reviews point out the need for judges to be vigilant in making sure that eyewitness identifications are accurate.

Accurate identifications are the subject of the article by Richard Wise and Martin Safer, who present a method for analyzing the accuracy of eyewitness testimony that can help judges in ensuring correct outcomes for defendants. It is a challenging task for judges.



Fiona Gabbert and her colleagues from the United Kingdom and U.S., Daniel Wright, Amina Memon, Elin Skagerberg, and Kat Jamieson, discuss their research, and the research of others, showing that eyewitness memory can be influenced by post-event information, with advice to police and attorneys (and judges) regarding how they can try to protect against faulty identifications by witnesses.

A cross-national team of researchers from New Zealand and the U.S., Jeffrey Foster, Maryanne Garry, and Elizabeth Loftus, provide a brief report on recent research studies they conducted showing that repeated erroneous information can influence witnesses and jurors, once again raising the problems of faulty eyewitness identifications.

Similarly, Brian Bornstein and Joseph Hamm report on several studies they conducted that show how judges can use jury instructions to protect against errors in eyewitness identifications.

The challenge is great for judges, but we owe it to defendants and victims to get it right.

I close by noting that we have reprised the cover photo used in a 1999 issue of *Court Review* that also looked at the legal and scientific issues involved with eyewitness testimony.—Alan Tomkins

Court Review, the quarterly journal of the American Judges Association, invites the submission of unsolicited, original articles, essays, and book reviews. *Court Review* seeks to provide practical, useful information to the working judges of the United States and Canada. In each issue, we hope to provide information that will be of use to judges in their everyday work, whether in highlighting new procedures or methods of trial, court, or case management, providing substantive information regarding an area of law likely to be encountered by many judges, or by providing background information (such as psychology or other social science research) that can be used by judges in their work. Guidelines for the submission of manuscripts for *Court Review* are set forth on page 13 of this issue. *Court Review* reserves the right to edit, condense, or reject material submitted for publication.

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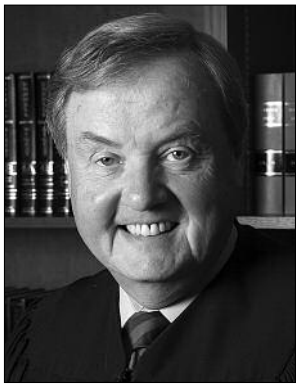
President's Column

On the Road to Making Better Judges™

Kevin S. Burke

The American Judges Association Executive Committee had a fascinating discussion last spring. Like many things in life the topic wasn't planned; it just happened. The discussion began with reflection: what does the American Judges Association stand for? What is it that our association can do to justify judges joining? The answer was simple: The mission of the AJA is to make better judges. And so we modified our motto. Yes, the AJA will continue to be the Voice of the Judiciary®, but our goal is not just to be a voice for judges, but also to seek to make better judges.



This edition of *Court Review* is as important as any we have ever published because the entire focus is on helping judges better understand and deal with eyewitness-identification issues. I hope you do two things with it. First, take the time to read this issue. Second, after you read it, share this issue of *Court Review* with a colleague who is not currently a member of the AJA. Better yet, share the edition and offer your colleague a free one-year membership. Just send an email with your colleague's name and address and email it to Shelley Rockwell (srockwell@ncsc.org). For AJA to be an effective voice and an influence on making better judges, we need to expand our membership.

Justice William J. Brennan, Jr. once wrote, "[t]here is almost *nothing more convincing* than a live human being who takes the stand, points a finger at the defendant, and says 'That's the one!'" Any trial judge knows all too well just how right Justice Brennan was. Researcher Elizabeth Loftus demonstrated the strength of eyewitness testimony in a mock-trial experiment: some jurors heard a case with an eyewitness, some without. With no eyewitness, only 18% of jurors gave guilty verdicts; with an eyewitness, the guilty rate rose to 72%. Even when the identification was impeached with strong evidence, the guilty rate was still 68%. But since Justice Brennan wrote, social scientists have proven that eyewitness identification is not only powerful—it also is often unreliable.

Despite this, the United States Supreme Court limited the constitutional challenges to eyewitness testimony in a case decided earlier this year. A man named Barion Perry had been detained at the crime scene, handcuffed after being suspected of breaking into cars. Without specifically being asked by police to identify the suspect, a neighbor pointed out Perry from a nearby window as the alleged thief. In an opinion written by Justice Ginsburg, the Court held that there was no due-process violation when law-enforcement officers haven't engaged in any improper conduct, and officers hadn't arranged for neighbor's identification of the handcuffed defendant. Even so, Justice Ginsberg did warn police and prosecutors to be careful about the trustworthiness of eyewitness testimony, and Justice Sotomayor issued a forceful dissent.

Although the United States Supreme Court has decided the due-process issue at the federal level, other issues—how to treat eyewitness testimony, what instructions to give, and what judges can learn from social scientists—remain alive.

Faced with these problems, the New Jersey Supreme Court devoted considerable time to examining what judges should do about eyewitness testimony. As a result, New Jersey jurors will be getting instructions from judges encouraging them to consider eyewitness testimony more skeptically. Also new are evidence-gathering rules spelling out how law enforcement and other investigators should record details on how an identification is made. While some proponents of the New Jersey rules claim that these changes will strengthen the justice system, save money, and reduce appeals, the real issue is this: Can we tolerate convicting and incarcerating people for crimes in which they are actually innocent?

In an article written right before the oral argument in Barion Perry's case Adam Liptak of the *New York Times* said, "Every year, more than 75,000 eyewitnesses identify suspects in criminal investigations. Those identifications are wrong about a third of the time, a pile of studies suggest." The system of justice inherently involves human error and it always will. As Katharine Graham once said, "A mistake is just another way of doing things." The goal of good judges must be to get it right all of the time. This issue of *Court Review* is our contribution toward reaching that goal.

Ready for the Psychologists:

Learning from Eyewitness Errors

James M. Doyle

Over a century ago, Dean John Henry Wigmore published a famous demolition of pioneering psychologist Hugo Munsterberg in the *Illinois Law Review*.[1] Munsterberg had complained in his best seller, *On the Witness Stand*, that while other disciplines and professions were hustling to learn the lessons about eyewitness memory that his new field of experimental psychology was beginning to teach, "the lawyer alone is obdurate."[2] Munsterberg charged that the lawyers chose traditional primitive ignorance over scientific enlightenment. Wigmore could not sit still for that. His satirical response is still remembered by psychologists as the bloodthirsty slaughter of psychology as a discipline by the greatest evidence scholar that the Anglo-American tradition ever produced: a grisly paradigm of the kind of welcome social scientists should expect from the legal system and its practitioners. If this is what you get from the great Wigmore, researchers reasoned, just imagine the treatment you will receive from an ordinary legal tribesman.

Wigmore's withering cross-examination of the wretched "Professor Muensterberg" in this article is so lengthy and so humiliating that there are moments when a slightly creepy sadistic pleasure seems to be animating the dean. But sadism wasn't the problem. The problem was Wigmore's cloddish professorial attempts at humor—Wigmore's sarcasm created a misimpression that he tried to correct for the rest of his life. Wigmore did want to issue a call to order: to correct Munsterberg's overstatements and to address Munsterberg's misapprehensions about legal practice. But Wigmore was far from an enemy of psychology as a discipline; he was actually one of psychology's earliest advocates, the best legal friend that psychology had.

The real purpose of Wigmore's article was to illuminate the potential in a law and psychology relationship and to throw his prestige behind its inception. Wigmore's goal was to herald the day when the lawyers and psychologists could move forward in "a friendly and energetic alliance in the noble cause of justice."[3] Yes, Munsterberg had jumped the gun in announcing the immediate utility of such an alliance; Wigmore thought that was still on the distant horizon. Even so, Wigmore looked forward to the day of its arrival, and he was confident that day would come. "When the psychologists are ready for the courts," he announced in a subsequent piece, "the courts will be ready for the psychologists."[4]

Various signs and portents—among them, this special issue—indicate that the courts finally are ready to mobilize the lessons taught by Munsterberg and his heirs; or at least that the courts are ready to take steps to *get* ready. This is an important moment in the vexed history of the law and eyewitness psychology relationship.

To understand where we are it helps to understand a little about both how we got here and where we could be going. The "friendly and energetic alliance" will have more than one path to choose from as it moves ahead. The path that realizes the fullest potential of the alliance is not the most obvious path, and finding it will require a new examination of the deep nature of the catalyst—the devastating catalog of DNA exonerations in eyewitness cases—that is pushing us forward.

Something more than a minor adjustment to judicial practice is called for here: this is an opportunity for judicial leadership.

DIAGNOSES AND PROBABILITIES

Hugo Munsterberg's pronouncements on the usefulness of contemporary psychology were overconfident and premature, but they were also remarkably prescient in anticipating future research. Munsterberg began to explain some of eyewitness memory's mechanisms and some of its particular dangers. He showed, for example, that humans do not have a permanent stable memory capacity like a videotape or a DVR available to be summoned for accurate replay whenever required. He showed that memory was malleable and reconstructive.[5] He also showed how forensic evaluations of memory evidence could go astray. For example, he showed that a witness's confidence was an unreliable indicator of the witness's accuracy.[6] But for current purposes, Munsterberg's method was as important as his findings.

Munsterberg's signature tool (at least for public display) was the staged demonstration. A man interrupts a lecture; he yells; he fires a gun; later, the audience of eyewitnesses is questioned about the event. Next, inaccuracies in the audience's responses are totaled. The number of errors in the witnesses' responses is shocking. Lots of eyewitnesses make lots of mistakes. These results grabbed attention, but they were not terribly useful for the legal system. They indicated that there were many mistakes,

Footnotes

1. John H. Wigmore, *Professor Muensterberg and the Psychology of Testimony: Being a Report of the Case of Cokestone v. Muensterberg*, 3 Ill. L. Rev. 399 (1909).
2. Hugo Munsterberg, On the Witness Stand (1908). The story of the encounter and its aftermath is told in some detail in James M. Doyle, True Witness: Cops, Courts, Science, and the Battle Against Misidentification (2005).
3. Wigmore, *supra* note 1, at 406. In fact, Wigmore may have had a better grasp of contemporary psychological research than Munsterberg himself. *See* Brian H. Bornstein & Steven D. Penrod, *Hugo Who? G.F. Arnold's Alternative Early Approach to Psychology and Law*, 22 Applied Cognitive Psychol. 759, 762 (2008).
4. John Henry Wigmore, The Science of Judicial Proof (1937).
5. Munsterberg, *supra* note 2, at 60.
6. *Id.*, at 56.

and they argued for an increased general skepticism about eyewitness accounts. But, as Wigmore pointed out, the legal system's concern is not with the general reliability of witnesses as a class; it is with the reliability of particular verdicts in individual cases. The legal problem arose in separating the mistaken from the correct—not the rate of mistakes, but their distribution. There, Munsterberg had little or nothing practical to offer.

When Robert Buckhout picked up Munsterberg's fallen banner in the 1970s, he relied on a modernized version of the same approach.[7] For example, he induced a New York television station to broadcast a staged crime and invite viewers to make choices from a staged lineup. The number of correct identifications this process yielded was lower than would have been achieved by random guessing.[8] But while his method may have been similar, Buckhout's temperament was very different from Munsterberg's. Munsterberg was an academic who retreated when faced with Wigmore's onslaught. Buckhout knew his science, but he was a happy warrior, a cheerful agitator who carried the battle into the courts and into the popular media. He not only accepted opposition, he gloried in it.

He published an accessible survey article on eyewitness error in *Scientific American*.[9] He testified on the unreliability of eyewitness testimony in the trial of California radical Angela Davis and was instrumental in winning her acquittal. He seized every opportunity to comment in the media (for example, opining on the case of a butcher identifying his own pork chops from a pork-chop lineup) where the lessons of eyewitness psychology could be taught. His science was aligned with his politics. He believed that criminal defendants, particularly poor and minority indigent defendants, were getting screwed by the legal system's complacent reliance on an antique view of how memory worked. He made an enormous impact, and he almost immediately rallied two groups of partners.

The first group was a cohort of idealistic younger psychologists, like Elizabeth Loftus, who were anxious to see their science have an impact in the world. Loftus attacked the eyewitness issue in a radically different way: she "did science" in the form of rigorously controlled experiments, changing one variable while holding all others constant. The results she began to produce were striking. She showed, for example, that when questions about a white barn were introduced into interrogations of witnesses who had viewed a film of an auto accident, over 20% of those viewers later reported seeing a white barn although in fact there had been no white barn in the film.[10] This was a crucial finding for eyewitness cases: it showed that eyewitness memory not only decayed, but also *changed*. It showed how a witness could not only forget the right man but also—after being unknowingly influenced by viewing mug shots or show-ups (which operate as "post-event information" like the white barn in an interview question)—could remember the *wrong* man.

Loftus's findings mounted quickly, and they went to the heart of the eyewitness experience. Taken together they indicated that in an eyewitness case, the memory of the witness is for all practical purposes the scene of the crime. They showed that memory evidence was in effect "trace evidence": difficult to collect, easy to contaminate, but impossible to test for contamination after any contamination has occurred. At the same time, Loftus's scrupulous scientific methods were winning her work admission to the blue-ribbon, peer-reviewed academic journals, and encouraging younger academic psychologists to extend and challenge her research. You could study eyewitnesses and have a scholarly career. Experimental findings such as Loftus's (unlike the demonstrations of Munsterberg and Buckhout) could be replicated or falsified. The number of published studies multiplied.[11]

Loftus's research "showed how a witness could not only forget the right man but also... could remember the *wrong* man."

And at this point, Buckhout's second group of recruits, the desperate criminal defense lawyers, joined in. Buckhout's testimony in the Angela Davis case got their attention, and his *Scientific American* article quickly circulated through the defense bar. Elizabeth Loftus published her popular general audience account of eyewitness science, *Eyewitness Testimony*,[12] at about this time, and that was buttressed by an influential *Stanford Law Review* comment written by Frederick Woocher (a trained psychologist, then in law school), which provided a blueprint for arguments for conveying psychological science through expert witnesses. Defense lawyers began to demand the admission of expert testimony by Loftus, Buckhout, and their colleagues, aimed at debunking faith in eyewitness evidence.

This point of entry was bad luck for anyone who hoped for a "friendly and energetic alliance." That wasn't obvious at the time. Persistent litigation over admissibility did help to keep the issue of eyewitness science alive in the courts, and feedback from skeptical courts did help to provoke new, better-targeted research. But these benefits came at a steep price.

The initial environment has affected discussions of eyewitness science ever since. Admissibility questions arise at the most acutely adversarial moments of the criminal process, and their resolution (at least in the eyes of the advocates) may determine who wins and who loses. Prosecutors—goaded by inflammatory rhetoric from Buckhout—quickly denounced eyewitness findings as enemy pseudoscience: a trick designed to let criminals go free by unnerving credulous lay jurors and sliming all eyewitnesses, most of who were right, and many of who were crime victims. For many prosecutors—then and

7. Doyle, *supra* note 2, at 49-68, discusses Buckhout's history and influence.
8. Robert Buckhout, *Nearly 2,000 Witnesses Can Be Wrong*, 2 Social Action & L. 7 (1975).
9. Robert Buckhout, *Eyewitness Testimony*, 231 Sci. Am. 23 (1974).
10. Elizabeth F. Loftus & John C. Palmer, *Reconstruction of Automobile Destruction: An Example of the Interaction Between Language and Memory*, 13 J. Verbal Learning & Verbal Behav. 585 (1974).
11. Brian Cutler & Steven Penrod, Mistaken Identification: The Eyewitness, Psychology and the Law (1995).
12. Elizabeth Loftus, Eyewitness Testimony (1979).

"Wells argued that preventing mistakes [during the] investigation would be better than trying to catch mistakes...."

now—eyewitness science is simply a shield for the guilty. For many judges, the cumulative price of the skirmishing over marginally interesting science the experts offered seemed enormous in terms of hours, dollars, and distended docket backlog.

While the battles over admissibility of expert testimony continued to grind on, another of Buckhout's recruits, Gary Wells, was engineering a paradigm shift.[13] Wells admired Loftus and accepted her findings as good science, but he also pointed out their limited utility.

Precisely because Loftus was a scrupulous scientist, she isolated and studied a single factor (*e.g.*, the wording of a question, the stress of the event, the presence of post-event information) at a time. Wells noted that these studies yielded statistical results that could tell you what happened eight times out of ten, but could not tell you whether *this* case was one of the eight, or one of the two. Even worse, every criminal event incorporates many factors, not just one, and there was no science-based mechanism for combining these factors and assessing their interactions. From Wells's point of view, offering post-hoc diagnosis of eyewitness error from the witness stand was the wrong way to mobilize the solid (but inherently probability-based) science that Loftus and a generation of their colleagues were producing.[14]

Wells successfully argued for the new orientation that has dominated criminal justice policy discussions about eyewitnesses for the past decade. He noted that some factors Loftus had studied (*e.g.*, lighting, age of witness, stress of event) are not under the criminal justice system's control. He called these "estimator variables." But he also noted that there were other factors (*e.g.*, lineup construction, lineup administration, witness interview technique) that the system's actors *do* have power over. If you understood how these "system variables" could be modernized, you could reduce the rate of error. Wells argued that preventing mistakes by identifying new best practices in investigation would be better than trying to catch mistakes from the witness stand after they happened. A torrent of research followed, exploring and refining new elements of "system-variable" design. The task of psychological science in this conception was the prevention of eyewitness errors as evidence was being produced, not the retrospective inspection of eyewitness testimony to see if an error had occurred. That research has now coalesced around the "double-blind sequential" photo-array and lineup protocol discussed later in this issue.

Then, just as that research matured, the DNA exoneration cases arrived. The eyewitness cases dominated the lists of wrongful convictions; the system-variable research was well developed, and its salience was immediately obvious. Influential actors such as Attorney General Janet Reno were eager to apply the researchers' lessons.[15] Expert-witness litigation does continue, and a gradual but definite trend toward the admission of eyewitness expert testimony in trials has gained momentum in the courts.[16] But the policy conversation has turned toward prevention: toward the design of system-variable "best practice" reforms of lineup and other investigative procedures. An accelerating wave of jurisdictions has been adopting the science-based eyewitness-evidence protocols.

If this is where we are, then where are we going? The answer to that question will depend in part on how we understand the lessons of the DNA eyewitness exoneration cases.

THE WRONG MAN AND THE WRONG PATIENT

Wigmore's "friendly and energetic alliance" received a dramatic push forward from the exoneration cases, but it would be a mistake to settle for the most obvious lessons that the eyewitness wrongful convictions seem to offer.

Smalarz and Wells are not wrong when they write that "[a]n increasingly strong case can be made for the argument that mistaken-eyewitness identification is the primary cause of the conviction of the innocent in the United States,"[17] but their familiar formulation uses "cause" in a shorthand sense that may mask both the complexity of the issue and the opportunities for mobilizing science in reform that the collision of eyewitness psychology and the DNA exonerations provide.

One very good way to see those complexities and opportunities is to examine contemporary medicine's encounter with its own version of the problem.

Just as the criminal justice system is haunted by the fact that it sometimes convicts the wrong man, medicine is haunted by the fact that it sometimes operates on the wrong patient. But when modern medical researchers began to look carefully into wrong-patient events, they uncovered surprising insights. For example, one intensive examination of a wrong-patient surgery discovered not just one but at least seventeen errors. The patient's face was draped so that the physicians could not see it; a resident left the lab assuming the attending physician had ordered the invasive surgery without telling him; conflicting charts were overlooked; and contradictory patient stickers were ignored. But the crucial point for the researchers was that *no single one of the seventeen errors they catalogued could have caused the wrong-patient surgery by itself.*[18]

13. Doyle, *supra* note 2, at 142-167.
14. Gary L. Wells, *Applied Eyewitness-Testimony Research: System Variables and Estimator Variables*, 36 J. Personality & Soc. Psychol. 1546 (1978).
15. Doyle, *supra* note 2, at 163-170.
16. *See generally* Elizabeth Loftus, James M. Doyle & Jennifer Dysart, Eyewitness Testimony: Civil and Criminal (4th ed. 2007) at 369-377.
17. Laura Smalarz & Gary L. Wells, *Eyewitness Identification Evidence: Scientific Advances and the New Burden on Trial Judges*, 48 Ct. Rev. 14, 14 (2012) (this issue). Recent investigations of non-DNA exonerations indicate that false testimony cases may outnumber eyewitness cases in certain varieties of false convictions. National Registry of Exonerations, http://www.law.umich.edu/special/exoneration/Pages/about.aspx (last visited July 9, 2012).
18. Mark R. Chassin & Elise C. Becher, *The Wrong Patient*, 136 Annals Internal Med. 826, 829-31 (2002).

Analysis showed not only mistakes by individual doctors and nurses, but also latent systemic problems. Communications among staff were terrible; computer systems did not share information. When teams failed to function, no one was surprised or bothered because of a culture of low expectations that "led [staff] to conclude that these red flags signified not unusual, worrisome harbingers but rather mundane repetitions of the poor communication to which they become inured."[19] Deviations from good practice had become normal, and a tragedy resulted.

What this meant to medical reformers was that the lessons of closely studied events such as the Chernobyl meltdown and the space shuttle *Challenger* launch disaster could be applied to healthcare. Like those tragedies, the wrong-patient surgery was an "organizational accident." No single error is sufficient to cause an organizational accident; the errors of many individuals ("active errors") converge and interact with system weaknesses ("latent conditions"), increasing the likelihood that individual errors will do harm. The practitioners and organizations involved in these tragedies did not choose to make errors—they *drifted* into them.[20] The disasters required no villains; they involved normal people, doing normal work, in normal organizations.[21] They suffered, in Charles Perrow's memorable phrase, "normal accidents."[22] Like the *Challenge*r launch decision, the medical tragedies were caused by "mistake[s] embedded in the banality of organizational life."[23]

These insights apply to a wrong-man conviction.[24] Our traditional wrongful-conviction narrative (the witness picked the wrong guy; the cops and the D.A. believed her; so did the jury) is not adequate. Nor is it adequate to isolate the performance of one operator or the imperfections one investigative technique employed in the case—for example, the traditional nonblind, simultaneous lineup—as either a sole cause or a silver-bullet solution.

Lots of things have to go wrong before the wrong man is convicted. Yes, the witness has to choose the wrong man from an array, but the police have to put him into the array in the first place and design the format of the array and the execution of the identification. Forensic evidence on the crime scene could have been overlooked or, although properly collected and tested in the lab, distorted in the courtroom presentation. Cell-phone records, Metrocard data, or other alibi information could have been ignored. Tunnel vision, augmented by clearance rate and caseload pressures from above, may have overwhelmed the investigators and the prosecutors. Poorly funded or untrained defense counsel may have failed to investigate alternative explanations or to execute effective cross-examination. The witness erred; the cops erred; the technicians erred; the prosecutors erred; the defense erred; the judge and the jury erred; the appellate court erred, too. No single one of these errors would have been enough without the others. The errors combined and cascaded; *then* there was a tragedy—and a "no-villains" tragedy at that.

"When we ask who is responsible for a wrongful conviction, the right answer is usually 'everyone involved'..."

When we ask who is responsible for a wrongful conviction, the right answer is usually "everyone involved," to one degree or another—if not by making a mistake, then by failing to catch one. And "everyone" includes not only cops and lawyers at the sharp end of the system, but also legislators, policymakers, funders, and appellate judges far from the scene of the events who dictated the conditions under which the sharp-end operators work. Look twice at the DNA-exposed wrongful convictions and you see that, as Charles Perrow noted, "[T]ime and again, the operator is confronted by unexpected and usually mysterious interactions among failures, [so that] saying that he should have zigged instead of zagged is possible only after the fact."[25] This is as true of a whole spectrum of criminal justice errors—mistaken releases, prisoners lost in prisons, and cold cases that stayed cold too long—as it is of wrongful convictions.

The habit of treating horrific wrongful convictions as single-cause events, and then totaling up, ranking, and prioritizing these causes, has produced useful innovations such as the double-blind sequential protocol and, in some places, has led those reforms to be integrated into practice, but it does not really engage the deeper nature of the problem. The solutions it has generated stop short of fundamentally improving future system reliability.

All new sets of best practices or checklists have to operationalized and executed, and they have to be maintained, monitored, evaluated, and perhaps junked and replaced when environments change or science advances. No new set of best identification practices can cover every circumstance, so an irreducible zone of discretion always survives, and operators are forced to manage life within that zone. From the moment it is written, every new checklist is under immediate and constant assault from clearance-rate pressure, docket-list backlog, and other environmental factors. "Drift" toward failure remains a threat to our new best practices just as it was to their discredited predecessors. No one had more checklists than NASA; NASA launched *Challenger* anyway.

Many tragic mishaps could never have been predicted (and cannot now be explained) by reference to the features of individual component parts. These tragedies are "emergent" events, results of the "greater than the sum of its parts" properties inherent in all systems.[26] Going "down and in" to find a broken component will not be enough to explain these happenings; we also have to go "up and out" to assess the envi-

19. *Id.*, at 829-830.
20. Sidney Dekker, Drift Into Failure (2011).
21. Sidney Dekker, Just Culture (2007).
22. Charles Perrow, Normal Accidents (1984).
23. Diane Vaughan, The Challenger Launch Decision: Risky Technology, Culture, and Deviance at NASA, xiv (1996).
24. This argument is made at greater length and in greater detail in James M. Doyle, *Learning from Error in American Criminal Justice*, 100 J. Crim. L. & Criminology 109 (2010).
25. Perrow, *supra* note 22, at 9.
26. Dekker, *supra* note 20.

"A modern approach to 'best practices' in collecting eyewitness-memory evidence is plainly called for...."

ronment that chose the component, allowed the component to fail, and made the failure catastrophic.[27] Making good design choices between alternative single components of the criminal process (*e.g.*, between "simultaneous" and "sequential" lineups) will aid progress but it won't finally answer the challenge.

It is axiomatic in high-reliability organizations that optimizing individual components is a poor route to overall system quality.[28] The double-blind sequential-lineup protocol is a more conservative screening test for guilt, but it isn't a perfect one.[29] Individual cases with idiosyncratic histories will still have to be decided. Even after modernizing reforms, judges will still have to answer the question that medicine asks when offered a more conservative screening test for, say, prostate cancer or breast cancer: What does *the rest* of our system do with this new pattern of test results?

Could a "friendly and energetic alliance" of science and legal procedure give us new tools to "screen out" the higher number of cases that less conservative show-ups or traditional simultaneous lineups currently "screen in?" Or give us alternative ways to apprehend the perpetrators "missed" in the new, more conservative sequential lineups? To help judges gauge the impact of minor variations from accepted "best practice"? To develop a "forward-looking accountability" that helps us understand past mistakes to prevent future ones?

The answer to all of these questions will be "no" unless the judiciary plays an informed part. If eyewitness science does advance Wigmore's "noble cause of justice," it won't happen in a single clap of thunder; it will happen as working judges apply the science with delicacy, to small details, in many decisions, and throughout the lives of many cases.

PRODUCERS AND INSPECTORS

Detectives speak of making cases; lawyers speak of trying them. The police operate a production stage in which they construct the case; the lawyers are elements of an inspection stage, during which the legal system evaluates the investigators' product.

Judges can have an important impact on improving both the production stage and the inspection stage if they master the basics of the eyewitness science. Something like that happened in medicine. When medical reformers accepted the "organizational accident" model of "iatrogenic" (caused by doctors or treatment) injuries to patients and understood that they were system errors, and not just the work of "bad apples," they opened a window both on a more comprehensive understanding of past events and a more productive way to move forward as a profession to prevent future tragedies. Wrongful convictions are "iatrogenic" too, and judges can do something about them.

Direct judicial intervention in the business of producing evidence in eyewitness cases dates from at least the Warren Court's exclusionary-rule cases in the 1970s. As several contributors to this issue point out, the scientific findings of recent decades have substantially undermined the Warren's Court's analysis of the problem. The sort of conscious police misconduct that can be deterred by exclusion is not the predominate issue, and the "reliability" test that the Warren Court instituted is largely obsolete. A modern approach to "best practices" in collecting eyewitness-memory evidence is plainly called for, and to their credit the law-enforcement authorities that must execute any best practices are moving to use science-based principles to renovate their procedures.[30]

In this new context, exclusive reliance on the "nuclear option" of complete suppression of identification testimony every time some investigator varies marginally from the new "best practices" will be unworkable. This doesn't mean that mistakes are inconsequential, but it does seem clear that judges will only rarely face one simple "in/out" decision about eyewitness testimony,[31] while they will frequently (often many times within the same case) face smaller opportunities to exercise discretion about the admissibility of elements of testimony, the control of experts, the drafting of limiting instructions, and the provision of cautionary instructions,[32] to deal with variances from the new accepted practices. Judges' careful, graduated responses to the impacts of suboptimal practices will become crucial to their supervision of the production phase of cases.[33]

The accuracy of these responses will depend on the individual judge's knowledge of the basics of the science of memory, not on the judge's mastery of broad lines of precedential appellate authority.[34] It is important, to take one example, that judges understand that the "strength" of a memory is a crucial factor in calculating the harm likely to have been caused by a suboptimal investigative practice. A "strong memory" formed in a lengthy encounter in bright light in calm conditions will be less affected by later procedural shortcomings than a

27. *Id.*
28. Donald Berwick, *Continuous Improvement as an Ideal in Healthcare*, 320 New Engl. J. Med. 53, 53-55 (1989).
29. Gary L. Wells, Nancy K. Steblay, & Jennifer E. Dysart, A Test of the Simultaneous vs. Sequential Lineup Methods (2011).
30. *See, e.g.*, Susan Gaertner & John Harrington, *Successful Eyewitness Identification Reform: Ramsey County's Blind Sequential Lineup Protocol*, Police Chief, Apr. 2009, at 26 ; Amy Klobuchar et al., *Improving Eyewitness Identifications: Hennepin County's Blind Sequential Lineup Pilot Project*, 4 Cardozo Pub. L., Pol'y, & Ethics J. 381 (2006).
31. This is qualified by the fact that a better understanding of the fundamental nature of eyewitness memory should make it clear to judges that the idea of an "independent source" for courtroom testimony subsequent to a biased pretrial identification comes close to being a convenient fiction. *See, e.g.*, Brandon Garrett, *Eyewitnesses and Exclusion*, 65 Vanderbilt L. Rev. 201 (2012).
32. *See* Brian H. Bornstein & Joseph A. Hamm, *Jury Instructions on Witness Identification* 48 Ct. Rev. 22 (2012) (this issue).
33. *See generally* Richard A. Wise & Martin A. Safer, *A Method for Analyzing the Accuracy of Eyewitness Testimony in Criminal Cases*, 48 Ct. Rev. 22, 24-34 (2012) (this issue). For examples of courts wrestling with this recognition, *see Henderson*, 27 A.3d 872 (N.J. 2011); Commonwealth v. Silva-Santiago, 453 Mass. 782 (2009).
34. Smalarz and Wells, *supra* note 17.

"weak" memory formed in a fleeting, violent episode. But it is also crucial that the judges making assessments understand the sources of "strength of memory" and remember that "strength of memory" is not the same as "witness confidence." Often, witnesses' self-reports of "strength" indicate only memory contamination, not meaningful memory "strength."[35]

The final inspection stage of the criminal process—the jury trial—does address the diagnostic problem that Gary Wells emphasized in his path-breaking "system-variable" article: the riddle of how to *combine* the psychological factors present in an event and investigation that impact eyewitness reliability. The trial uses an ancient but flexible aggregating device: narrative. Jurors do not count and weigh piles of factors, or apply Bayesian formulae to arrive at probabilities; they generate and assess stories.[36] In the minds of the jurors, the psychological factors interact over time as a narrative unfolds. This feature of our inspection stage also has a fundamental political importance: the lay-citizen jury's one-time concentration on a specific unique narrative provides a bracing challenge to the official practitioners' endemic tendency to believe that since we know the odds in our fields we can simply play those odds. The professionals tend to believe that if we know what happens 90% (or 80%, or even 51%) of the time, then we know what to do 100% of the time. If things go right under the story model, every accused gets an individualized jury judgment, not a roll of the probabilistic dice.

An important part of the trial judge's role is to manage the "story-model" core of the jurors' work, and the science of identification indicates that eyewitness cases present particularly difficult problems in this regard. This task doesn't require a Ph.D. in psychology, but it does require more than reading appellate-suppression and expert-testimony precedents.

Many jurors, if left to their own devices, will default to a "videotape" story—the witness recorded the event like a camera, stored it on a permanent tape, and is now replaying it—that is contradicted by the scientific truth that memory evidence is malleable "trace evidence." It is also pretty clear that traditional tools such as cross-examination will be insufficient to convey much of the new science of memory because the jurors' vulnerability is not on the level of specific missing pieces of data (*e.g.*, "the witness was/was not confident") but on the level of the general background interpretive principles that no cross-examiner can reach (*e.g.*, "confidence means accuracy") no matter how clever his or her questions.[37]

The "estimator variable" story of the crime event must be complemented by the "system variable" story of the *investigation* before the story-model inspection can be effective. The eyewitness research indicates that in administering the story model, judges will have to attend to not only general juror "common-sense" principles that may be mistaken, but also specific pieces of data that scientists have learned are necessary to the story-testing process but that upstream operators have not preserved or disclosed. These data will not be available unless science-informed judges act to make them available.

"[J]udges must incorporate into their daily practice... the production and the inspection stages of an eyewitness-based prosecution...."

This means that judges must incorporate into their daily practice the recognition that the production and the inspection stages of an eyewitness-based prosecution are reciprocally related. Inevitably, while the judges "downstream" are trying to adjust for the exigencies of upstream investigative operations, the "upstream" law-enforcement operators are trying to adjust their conduct in anticipation of the inspection that awaits their cases downstream.

It is axiomatic in medicine and other industries that end-of-process inspection schemes, although necessary components of their systems, are poor routes to overall system quality.[38] Practitioners who are subject to inspection are resourceful in both avoiding the inspection altogether or in gaming the inspection when they cannot avoid it. Those being inspected usually end up owning the process, and their primary goal is usually their own safety. Criminal-justice-system operators are not immune to these tendencies. The fact that only a tiny portion of criminal cases receives jury scrutiny certainly has something to do with the costs of jury trials in terms of time and money, but it also reflects professional practitioners' disinclination to submit to inspection by unpredictable lay jurors, especially when that inspection takes place in an exposed zero-sum courtroom contest where one side wins (and one side loses) everything.

Here's an example. There is a segment of the eyewitness-exoneration list that catalogs trial prosecutors' failures to turn over exculpatory material. It does not show that those prosecutors lusted to frame known innocents, but rather it illuminates an impulse to shape the adversary trial inspection stage so that it comes out (from the prosecutors' perspective) the "right" way. Sometimes, prosecutors don't disclose eyewitness exculpatory material because they simply don't understand what factors are influential in eyewitness performance. Sometimes, prosecutors withhold information to convict the men the prosecutors believe are guilty without interference from "red herrings" that defense lawyers might manufacture out of dissonant facts.

The trial prosecutors in the wrongful-conviction *Brady* cases, like workers in most production processes, evidently adopted a "covert work system."[39] They decided to evade formal disclosure requirements and buried alternative narratives because they believed sharing the exculpatory facts would interfere with achieving what they saw as the "real" goal tac-

35. *Id.* at 18.

36. *See* Nancy Pennington & Reid Hastie, *Explaining the Evidence: Tests of the Story Model for Juror Decision Making*, 62 J. PERSONALITY & SOC. PSYCHOL. 189 (1992).

37. DOYLE, *supra* note 2, at 35-49. Jules Epstein, *The Great Engine That Couldn't: Science, Mistaken Identifications, and the Limits of Cross-Examination*, 36 STETSON L. REV. 727 (2007).

38. ATUL GAWANDE, THE CHECKLIST MANIFESTO: HOW TO GET THINGS RIGHT, 185 (2009).

39. *See, e.g.*, Connick v. Thompson, 131 S. Ct. 1350 (2011); David D. Woods, *Conflicts Between Learning and Accountability in Patient Safety*, 54 DEPAUL L. REV. 485 (2005).

"Judges cannot dictate all the choices made by the system's other actors, but they can influence them."

itly assigned to them by officials (or the public) to whom they were accountable. Turning a blind eye to these practices encourages upstream tunnel vision by rewarding practitioners' surrender to tunnel vision with a "cleaner" trial inspection for the hypothesis that they prematurely decided is accurate. Tunnel vision is a "cause" of wrongful convictions, but tunnel vision is also an *effect* of the sharp-end operators' discomfort with the demands of the end-stage inspection machinery. A resulting wrongful conviction is an "organizational accident": the police make the wrong choice; the prosecutors buy it too quickly; and the defense and the jury are crippled in their inspectors' roles.

One of the lessons of the eyewitness-exoneration cases is that judges must develop (and incorporate in their inspection-stage calculations) an awareness of the gravitational pull away from comprehensive and transparent investigation that is always acting on production-stage practitioners. Science-conscious judges can put a brake on this rush down the "organizational-accident" tunnel by making it clear that *they* know what matters in eyewitness-evidence collection and that they will insist on detailed documentation and disclosure. The story model of aggregating eyewitness factors cannot work if details (*e.g.*, confidence-boosting comments, exposure to co-witnesses, neglected alternative suspects) are not available to be considered as part of the story. Diagnosing eyewitness errors requires weighing not just catastrophic contradictions (*e.g.*, the defendant is tall, the crime-night police report described a midget) but also small narrative details (*e.g.*, brief exposures to co-witness accounts, or mug-book pictures of the defendant) that accumulate and ultimately constitute the story of inadvertently corrupted eyewitness memory traces.

The categorical exclusion of identification evidence because of misconduct may become less frequent as law enforcement gradually absorbs and adapts the modern "system variable" science. But pretrial hearings that will allow the trial judge to assess (on some basis other than laconic police reports) the source and quality of the eyewitness evidence that is *not* excluded and to decide which judicial tools—for example, *in limine* edits of evidence, cautionary instructions—will assist the jurors' story-model inspection and will become more important.[40] Unless alert and informed judges play an active role in protecting these aspects of story-model testing, sharp-end practitioners worried about inspections will simply shift from "don't turn it over" to "don't write it down," a practice that will end up hampering not only inspectors, but their fellow investigator-producers, who could be exploring alternative theories and correcting their tunnel vision.

JUDICIAL-SYSTEM LEADERS: BEYOND INSPECTION

There is no arrangement of gears and switches in criminal justice, no system in that sense that we can reach for and fix with a wrench or a hammer. But, like it or not, the world of criminal justice is a complex functioning ecosystem like a pond or a swamp where well-meaning actions on this coast can have disastrous, unanticipated impacts on the far shore. Ignoring this fact will fulfill the axiom that the cause of problems is solutions. Judges cannot dictate all the choices made by the system's other actors, but they can influence them. In fact, the nature of the system guarantees that judges cannot *avoid* influencing those choices. Even judicial silence and inaction will always have an impact.

There is opportunity as well as danger in this interdependency of criminal justice's operators. A recent episode in the history of the "friendly and energetic alliance" provides an example. Law-enforcement practitioners were intrigued in the aftermath of the DNA exonerations by the potential of the "double-blind sequential" system-variable approach, but they were uncomfortable that it had not been tested in the field. A well-meaning, go-it-alone attempt by the general counsel of the Chicago Police Department to conduct a field study to fill the gap resulted in a kind of scientific travesty.[41] But when an actual alliance of science and law enforcement was formed by a team composed of researchers, the Police Foundation, the Center for Problem-Solving Policing, and the American Judicature Society to design and execute a scientifically rigorous field examination of the issue, it largely vindicated the hopes of the advocates of that reform.

In the process of organizing the study the researchers developed—and the frontline practitioners tested the practicality of—a laptop-housed program that allows for both the effective administration and the meticulous documentation of double-blind sequential eyewitness-identification procedures. Seen from the system level, this is an example of errors spurring us to learn how the conditions facing the sharp-end investigators *and* the inspecting trial courts could both be substantially improved by an investment made by officials distant from the scene in cooperatively identifying and disseminating a relatively simple (and relatively inexpensive) technological improvement. As we enter an era in which every patrol car will have a laptop and every court will face subtle eyewitness evidentiary issues, this is a development that all of the operators jointly responsible for eyewitness "organizational accidents" can work together to accelerate. Recognizing that the judiciary doesn't draft law-enforcement budgets or vote on law-enforcement appropriations isn't quite the same thing as saying that the judiciary can't find ways to signal its support for such an effort.

But it is also worth focusing for a moment on the *practice* of nonblaming learning from error, apart from that practice's immediate products.

Working steadily on "organizational-accident" error analysis can create an increased system consciousness among the practitioners who staff the components of the criminal process.

40. *See, e.g.*, State v. Henderson, 27 A.3d 872 (N.J. 2011).

41. Daniel Schacter et al., *Policy Forum: Studying Eyewitness Identifications in the Field*, 32 L. & HUM. BEHAV. 3, 4 (2007).

A disciplined commitment to non-blaming, team analysis of error can lay the foundation for mobilizing the new ideal of continuous quality improvement that is transforming the culture of contemporary medicine in criminal justice.

Inspection of the prosecution's case during an adversary trial before a lay jury is a permanent feature of our system. It expresses fundamental American convictions about the relationship between the accused individual and the state. But the goal of the trial process is to protect *this* innocent citizen from the state. The DNA exonerations have raised concerns about the adversary trial's weaknesses even in that specific role,[42] but no one ever claimed that the trial's role is to analyze the investigative and charging processes and make them more reliable in future cases. A jury that believes that it has caught a faulty investigation says "not guilty" and nothing more. Appellate courts review the legal procedures; they do not reconsider the facts, and their review is entirely backward looking. Both are necessarily uninformative.

The criminal justice system currently lacks the capacity for "forward-looking accountability"[43] that not only catches past mistakes, but also anticipates and precludes future ones.

The challenge for the judiciary presented by a new "organizational-accident" understanding of how eyewitness errors happen is not protecting a presumptively safe system from the misconduct of sloppy (or even evil) human components—the approach taken by the Warren Court in its misconduct-based suppression cases. The challenge judges will confront is how to invigorate and support a culture of constant, routine attention to safety and reliability in the criminal process.

The missing weapon in our approach to error is not the once-in-a-decade, blue-ribbon panel of dignitaries at the chief justice and superintendent level, convened to redesign the architecture of the criminal justice system. We have examples of that vehicle now, and the judiciary has played a leading role in several of them.[44] When the goal is changing structural elements of the system by legislation or rulemaking, the political heft of those high-ranking players can be useful, even essential.[45]

What we are missing is a consistent commitment to regular, routine review of known errors and "near misses," conducted by experienced practitioners and stakeholders (for example, victims' rights professionals) supplemented where appropriate by subject-matter experts and (at least in the beginning) by specialists in analyzing the sources of system error and in the error-review process itself. As Lucien Leape argued in his seminal essay *Error in Medicine*:

> The emphasis is on *routine*. Only when error is accepted as an inevitable, although manageable, part of everyday practice will it be possible to shift from a punitive to a creative frame of mind that seeks out and identifies the underlying system failures.[46]

For many reasons the best hope for breathing life into the "friendly and energetic alliance in the noble cause of justice" may lie in the judiciary: in judges who exercise their power to convene criminal justice stakeholders outside their familiar adversary bunkers. The alliance can serve the noble cause not only by asking the system's actors to do a better job playing "Whac-A-Mole" and catching past errors one at a time, but also by asking them to uncover and address the abiding latent weaknesses of the system that will survive to cause future errors.

"Working steadily on 'organizational-accident' error analysis can create an increased system consciousness...."

What if, when the next wrongful eyewitness conviction is revealed, the local judiciary amazes the world by calling for a dispassionate, all-stakeholders examination of the error? Or what if, when DNA results come back from the lab six months after an arrest and show that law enforcement arrested the wrong guy on the night of the crime, the judges suggest that a team examination of this "near miss" might pay dividends, both in terms of what worked and what nearly didn't?

Just as all aviation-industry participants and the public expect the National Transportation Safety Board to convene a mixed team of specialists to give an account of what happened when a plane goes down, criminal practitioners and the public could learn to expect that we will marshal a team including an investigator or patrol supervisor, a prosecutor, a forensic scientist, a defender, a judge, a victims' representative, and the jurisdiction's risk management officers, joined by additional specialists as needed, in a nonblaming process of dissecting the record of what happened and sharing the account they have developed. The goal would be to understand the gritty facts, to do the sort of clinical fact-finding that inevitably suffers when everyone in a turf-conscious, blue-ribbon group is anxiously looking over his or her shoulder at potentially sweeping and unwelcome law reforms.

Continually working on improving system reliability means changing the system's culture, not just its architecture. Overhauling institutional arrangements, identifying best lineup practices, and devising checklists, as difficult as these tasks might be, are the easy parts. Working on changing the culture means concentrating on giving a primary place to workmanship and professionalism instead of blame and discipline. It means learning—as medicine learned—to treat errors as "sentinel events" to be studied, not as embarrassments to be buried.

The history of the eyewitness cases illuminates the potential in a coherent program of nonblaming learning from error that

42. Dan Simon, *The Limited Diagnosticity of Criminal Trials*, 64 Vanderbilt L. Rev. 143 (2011).
43. Virginia A. Sharpe, *Promoting Patient Safety: An Ethical Basis for Policy Deliberations*, Hastings Center Report, Special Supplement No. 33 (2003).
44. *See* Christine C. Mumma, *The North Carolina Actual Innocence Commission: Uncommon Perspectives Joined by a Common Cause*, 52 Drake L. Rev. 647 (2004).
45. Stephen Saloom, *Adversaries as Allies: Joining Together to Prevent Criminal Injustice*, 73 Albany L. Rev. 1235 (2010).
46. Lucian L. Leape, *Error in Medicine*, 272 JAMA 1851, 1854 (1994).

includes the evaluation of "near misses," and offers rewards both within local systems and across scattered systems. A common national template for error review, enacted locally and informed and challenged by diverse local experiences, could substantially mitigate the fragmentation of American criminal justice.

These advantages can be multiplied if a simple mechanism—a clearinghouse, or a wiki-style community of practitioners, researchers, and policymakers—could be developed for distributing and commenting on the reports of errors.[47] Reading of a distant system's experience of completed accidents can alert currently isolated practitioners to the operation of dangerous latent features in their own local systems. Reading studies of remote "near misses" can reveal both those dangerous latent features and potential fail-safe devices or procedures that are *not* present locally, but which provided resilience and kept the near miss in another jurisdiction from becoming a tragic "hit." It can counteract the tendency of today's best practice to calcify into a ceiling that blocks future improvements.

After an exoneration it is often very easy to see in hindsight where a wrong decision was made. But congratulating ourselves on recognizing past bad choices won't get us very far. We have to learn why the last bad decision looked like a *good* decision from the perspective of the mistaken detective or prosecutor or defender or judge at the time it was made. If we don't, the root causes of the last tragedy will continue to lie in wait for the next decision maker who comes along. Accounts of eyewitness wrongful-conviction cases give striking evidence of how much we could learn about latent system defects from a close, all-stakeholders analysis that incorporates the scientific contributions[48] that follow in this issue and the operations-oriented insights of the sharp-end participants who do the work on the streets and in the courts.

The judiciary is uniquely well placed to stake out the common ground on which criminal-justice-system actors could meet, to invite the participants onto that ground, and to help them to defend that ground against the short-term pressures for public pillories filled with scapegoats.

The DNA exonerations have killed the illusion of an infallible justice system forever. From now on, the legitimacy of the criminal justice system in the public's eye will depend significantly on that system's willingness to confront its own failures.[49] We will never have an exact count of those failures, but when the most careful analyses we can muster suggest that the wrongful-conviction rate may be as high as 6-15% in sexual-assault cases,[50] the exact count becomes almost irrelevant. All of us in criminal justice have some explaining to do, and we could start by explaining our practices to each other, without trying to point fingers and assign blame.

We have some prevention to do as well. When medicine adopted its new approach to iatrogenic "sentinel events" and moved toward self-consciously creating a culture of safety, it quickly saved 120,000 patients' lives in eighteen months.[51] The eyewitness cases, with their wrongfully convicted defendants and their wrongfully free perpetrators (and the later victims those perpetrators find) make a strong argument that the criminal justice system's natural leaders—the judges—armed with an important body of scientific knowledge available for application, could do some leading in that direction.

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47. *See* Doyle, *supra* note 24.
48. An excellent comprehensive analysis of the scientific literature bearing on the criminal process as a whole is found at Dan Simon, In Doubt (2012).
49. *See generally* Tom R. Tyler, Why People Obey the Law: Procedural Justice, Legitimacy and Compliance (2006).
50. John Roman, Kelly Walsh, Pamela Lachman & Jennifer Yahner, Post-Conviction DNA Testing and Wrongful Conviction 57 (2012).
51. Charles Kenney, The Best Practice: How the New Quality Movement Is Transforming Medicine 270-272 (2008).

Court Review Author Submission Guidelines

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Eyewitness-Identification Evidence:

Scientific Advances and the New Burden on Trial Judges

Laura Smalarz & Gary L. Wells

An increasingly strong case can be made for the argument that mistaken-eyewitness identification is the primary cause of the conviction of the innocent in the United States. The strongest single body of evidence in support of this proposition is the collection of cases in which forensic DNA testing was used to exonerate people who had been convicted by juries and were serving hard time (some on death row). These cases are well documented and tracked at the Innocence Project website and, as of this writing, there were 267 fully exonerated cases, of which 203 (76%) were cases involving mistaken-eyewitness identification.[1]

This set of DNA exoneration cases is extremely interesting because simple math and logic indicate that the number of undiscovered cases has to be much larger than 203. Consider just two simple multiplying factors. First, these 203 exonerees were the lucky ones for whom the DNA-rich biological evidence was preserved post-conviction. Most cases that were tried prior to the advent of forensic DNA testing can never be tested because the biological evidence was never properly collected or because it was destroyed, was lost, or has deteriorated to a non-testable state. But perhaps the biggest factor of all is that only a small fraction of cases can ever be solved with forensic DNA testing to begin with. Virtually every DNA exoneration case among the 203 was a case of sexual assault.[2] This is not because sexual assault witnesses are poor eyewitnesses; in fact, they are perhaps the best single category of eyewitnesses because they get a closer and longer look at the perpetrator than do victims of most other types of crimes. Instead, the reason most DNA exonerations are almost exclusively cases of sexual assault is because sexual-assault cases are the ones that leave behind biological evidence (principally semen) that can be tested for claims of innocence and exclusion. And yet, sexual-assault cases account for fewer than 5% of all eyewitness-identification cases. This fact alone means that the 203 exonerations figure needs to be multiplied by a factor of 20 (yielding 4,060 cases) to account for cases of eyewitness misidentification for crimes in which there was likely no biological evidence. And even this number is a conservative estimate because it assumes that the 203 discovered wrongful convictions represent the full number of wrongful convictions for sexual-assault cases, which cannot be true because of the sexual-assault cases for which the evidence was not properly collected or was lost, was destroyed, or has deteriorated. Hence, the 203 cases (which continue to grow) can only represent the tip of a much larger problem. In addition, because forensic DNA testing can only solve a small subset of criminal cases, it means that we are still heavily dependent on eyewitness-identification evidence for solving crimes.

Although members of the public and much of the legal system generally think of the eyewitness-identification problem as having been "discovered" via the forensic DNA exonerations, psychological scientists were "blowing the whistle" on eyewitness-identification evidence long before the advent of forensic DNA testing, which only began in the 1990s. Starting in the 1970s, cognitive and social psychologists began conducting controlled experiments in which unsuspecting people witness a staged crime and later have to try to identify the "perpetrator" (actually an accomplice of the researchers) from a lineup.[3] Throughout the last half of the 1970s and continuing to this day, psychological scientists have published these experiments in peer-reviewed social science journals and have derived a large number of conclusions and recommendations based on a better understanding of how mistaken identifications happen.

In the development of this social science literature on eyewitness identification, psychological scientists have placed a premium on a particular type of variable called a "system variable."[4] System variables are those that affect the chances of mistaken identification, but over which the criminal justice system has control. For instance, a lineup in which the suspect is the only one who fits the witness's description of the perpetrator increases the chances of a mistaken identification, and this is under the control of the criminal justice system. In contrast, there are variables that affect the chances of mistaken identification over which the criminal justice system has no control but instead can only estimate their impact; these are called "estimator variables." An example of an estimator variable is whether the race of the perpetrator matches the race of the witness. Research consistently shows that cross-race identifications are less reliable than are within-race identifications, but the justice system cannot control whether the race of the witness is the same versus different from the race of the perpetrator.

The system-variable versus estimator-variable distinction is important because only system variables can inform the justice system about ways to improve the accuracy of eyewitness iden-

Footnotes

1. The Innocence Project, *available at* http://www.innocenceproject.org (last visited May 9, 2012).
2. Often, these are cases of sexual assault plus robbery, or sexual assault plus murder, but sexual assault is the common element because that is where the DNA evidence is found.
3. A special issue of Law & Human Behavior (volume 4, issue 4) in 1980 devoted to eyewitness behavior illustrates this early work.
4. The system-variable concept in eyewitness identification was first introduced in 1978 as a way of focusing the research experiments on methods to improve the accuracy of eyewitness identifications rather than simply showing that eyewitness identifications are often unreliable. Gary L. Wells, *Applied Eyewitness Testimony Research: System Variables and Estimator Variables*, 36 J. Personality & Soc. Psychol. 1546 (1978).

tifications. Numerous jurisdictions have adopted a particular "package" of lineup-procedure reforms based on psychological scientists' system-variable research—states such as New Jersey, North Carolina, Ohio, and Wisconsin as well as places like Dallas, Denver, Minneapolis, Boston, and Tampa, among others. This package of reforms includes better ways to select lineup fillers, better instructions to witnesses prior to their viewing a lineup, the use of a sequential lineup procedure,[5] the use of double-blind lineup procedures,[6] and the securing of a certainty statement at the time of identification (prior to the opportunity for extraneous factors to affect the witness's certainty). All of these reforms are meant to increase the reliability of the identification and are based on empirical evidence that these system factors are critical to the chances that the identification is mistaken.

For the most part, these system-variable findings and recommendations have been directed at law-enforcement agencies because they are the ones in control of the procedures that are used to collect eyewitness-identification evidence. But, as we argue in this article, trial judges also play a very important role. There is no guarantee that a given eyewitness identification came from a lineup that followed procedural recommendations, but once that identification evidence is presented at trial, it makes a strong and compelling case against the defendant. Research has found that jurors are likely to accept eyewitness testimony as accurate as long as the eyewitness is confident and consistent.[7] Thus, it is critical that identification evidence is evaluated with scrutiny to ensure that only reliable identifications make it into the courtroom to be heard by a jury.

Trial judges are the ultimate arbiters of whether to accept identification evidence as reliable. Commonly, this is played out in a suppression hearing in which the defense might argue that the identification was obtained in a way that was so suggestive or otherwise problematic that it should be suppressed. Accordingly, our goal in this article is to report some key scientific findings regarding eyewitness identification that are relevant to the trial court's function of assessing eyewitness-identification reliability. In doing this, it is useful to remember that reliance on the suppression hearing and the ruling of the trial court regarding admissibility was fully in play for the 203 mistaken identifications that resulted in convictions and the unknown number of others that (due to the absence of DNA evidence) will never be detected. Just as in those cases, about the only thing standing between a mistaken identification and wrongful conviction is the ability of the trial court to make effective rulings on the reliability of eyewitness identifications in pretrial hearings.

"For the most part... system-variable findings and recommendations have been directed at law enforcement agencies[, but...] trial judges also play a very important role."

SOME CRITICAL SCIENTIFIC FINDINGS

The scientific literature on eyewitness identification is too large and vast to fully summarize here. There are a number of extensive published treatments that are useful for a more complete understanding of these issues.[8] Here, we extract some of the more useful general principles that help us understand how mistaken identifications and false certainty (being certain but mistaken) occur. Then, in the next section (the *Manson* Test) we relate some of these general observations to the task of the trial judge.

RELATIVE JUDGMENTS

One of the staple conceptualizations of eyewitness-identification errors is called the relative-judgment process. This conceptualization holds that witnesses tend to make identifications from a lineup based on their judgments about who looks the *most* similar to their memory of the perpetrator relative to the other lineup members. Although this process often leads witnesses to make accurate identifications when the culprit is present in the lineup, it creates a dangerous situation when the lineup does not contain the actual culprit because there is always someone who looks more like the culprit than do the remaining lineup members.[9] The absence of the culprit in a lineup simply means that the police have focused their investigation on the wrong person. It is an extremely difficult task for a witness to detect the absence of the perpetrator in a lineup, in part because the relative-judgment process does not provide a mechanism by which witnesses may decide to "reject" the lineup. To the extent that witnesses assume that the police are showing them a lineup that contains the perpetrator, witnesses relying on a relative-judgment process will tend to make positive identifications in instances in which they should be saying, "It's none of them." There is no way to know how often the suspect in the lineup is actually the culprit, but because there is no reasonable-cause criterion to place

5. A sequential lineup is one in which the witness does not view all members of the lineup at the same time (a simultaneous lineup) but instead views one photo at a time and makes a decision on that one before viewing the next. Research generally supports the finding that the sequential procedure produces fewer mistaken identifications. Nancy Steblay, Jennifer Dysart, & Gary L. Wells, *Seventy-Two Tests of the Sequential Lineup Superiority Effect: A Meta-Analysis and Policy Discussion*, 17 PSYCHOL. PUB. POL'Y. & L. 99 (2011).
6. A double-blind lineup procedure is one in which the person administering the lineup is unaware of which lineup member is the person of interest and which are merely fillers so as to prevent the types of influence on the witness that are mentioned later in this article. *See* GARY L. WELLS, EYEWITNESS IDENTIFICATION: A SYSTEM HANDBOOK (1988).
7. Gary L. Wells, Amina Memon, & Steven Penrod, *Eyewitness Evidence: Improving Its Probative Value*, 7 PSYCHOL. SCI. PUB. INT. 45 (2006).
8. For a broad, general treatment of eyewitness-identification research, *see* HANDBOOK OF EYEWITNESS PSYCHOLOGY (VOL 2): MEMORY FOR PEOPLE (Roderick C. L. Lindsay et al. eds., 2007).
9. Gary L. Wells, *The Psychology of Lineup Identifications*, 14 J. APPLIED SOC. PSYCHOL. 89 (1984).

"Given what we know about the relative-judgment process, a biased lineup drastically increases the chances that an innocent suspect will be mistakenly identified."

someone in a lineup (police can conduct a lineup based on a mere hunch), the number of culprit-absent lineups being shown to witnesses could potentially be quite high. Indeed, in all of the DNA exoneration cases involving eyewitness identifications, the actual culprit was not in the lineup and the witnesses made identifications nevertheless.

Perhaps the best evidence of the operation of the relative-judgment process is from experiments that use the "removal without replacement" procedure.[10] This procedure involves showing witnesses to a staged crime one of two lineups. Some witnesses view a lineup that contains a picture of the culprit among a set of filler photos, and other witnesses view the exact same lineup except that the photo of the culprit is removed and is not replaced with another photo. If positive identifications of the culprit in the culprit-present lineup are a result of true recognition rather than a relative-judgment process, then all of the positive culprit identifications should shift to "not there" responses when the culprit is excluded from the lineup. In an experiment testing this idea, 200 eyewitnesses to a staged crime were shown either a culprit-present lineup or a lineup in which the culprit was removed without replacement. As Table 1 shows, the majority of the witnesses who identified the culprit in a culprit-present lineup would simply have identified someone else (primarily #2, whose rate of identification went from 13% when the culprit was present to 38% when the culprit was removed) if the culprit had not been present. Hence, it seems that rather than choosing the culprit because they genuinely recognized him, witnesses simply chose whichever person best fit their memory of the perpetrator.

The degree to which the suspect seems to fit the witness's memory of the perpetrator is highly dependent on the properties of the lineup itself. For example, if a lineup is somehow biased against the suspect (*i.e.*, the suspect stands out in some way or the fillers in the lineup do not fit the witness's description of the culprit), then the suspect will be the one who, relative to the other lineup members, is the most similar to the witness's memory of the culprit. Given what we know about the relative-judgment process, a biased lineup drastically increases the chances that an innocent suspect will be mistakenly identified. Accordingly, researchers have made a sharp distinction between the nominal size of a lineup, which refers to the number of photographs that are in the set, and the functional size of the lineup.[11] The functional size refers to the number of fillers who make viable alternatives to the suspect, and is calculated by taking the reciprocal of the proportion of "mock witnesses"[12] who choose the suspect from the lineup. For example, if 50 of 100 mock witnesses choose the suspect from a six-person lineup, the reciprocal is 100/50 = 2.0, thus the lineup has a functional size of only 2; if 20 picked the suspect, functional size would be 100/20 = 5.0, and so on. When a lineup includes members who do not fulfill their role as acceptable alternates to the suspect, the lineup is effectively smaller than its actual size, and the risk of mistaken identification is increased. For example, a six-person lineup in which only three members fit the witness's description of the perpetrator increases the risk of mistaken identification from one in six to one in three. In a biased lineup, a relative-judgment process will be even more likely to result in a positive identification of the suspect, regardless of whether the suspect is the perpetrator of the crime.

One way to help witnesses avoid relying solely on a relative-judgment process during the identification task is to make them aware that the actual culprit may not be present in the lineup. Researchers have demonstrated that instructing witnesses that the culprit "might or might not be present" (sometimes called a warning or a pre-lineup admonition) can greatly decrease the rate at which mistaken identifications occur. In the original study of instruction effects, 78% of witnesses who were not explicitly warned that the culprit might or might not be present made mistaken identifications from a culprit-absent lineup; in contrast, the mistaken-identification rate dropped to 33% when

TABLE 1. RATES OF CHOOSING LINEUP MEMBERS WHEN A CULPRIT IS PRESENT VERSUS REMOVED

	LINEUP MEMBER						
	1	2	3	4	5	6	NO CHOICE
CULPRIT PRESENT	3%	13%	54%	3%	3%	3%	21%
CULPRIT REMOVED (WITHOUT REPLACEMENT)	6%	38%	—	12%	7%	5%	32%

*Culprit is in position 3 for culprit-present lineup and removed (without replacement) for culprit-absent lineup.
Source: Gary L. Wells, *What Do we Know About Eyewitness Identification?*, 48 AM. PSYCHOLOGIST, 553, 561(1993).

10. Gary L. Wells, *What Do We Know About Eyewitness Identification?*, 48 AM. PSYCHOLOGIST 553 (1993).
11. This test, and the functional-size versus nominal-size distinction, has been in use since 1979 among eyewitness researchers. Gary L. Wells, Michael R. Leippe, & Thomas M. Ostrom, *Guidelines for Empirically Assessing the Fairness of a Lineup*, 3 LAW & HUM. BEHAV. 285 (1979).
12. "Mock witnesses" are actually not witnesses at all. They are simply people who are given the verbal description of the culprit that was provided by the actual eyewitness, and their task is to guess which person is the suspect in the case.

the eyewitnesses were given this warning.[13] And it is not the case that witnesses were simply choosing less in general; 87% of the eyewitnesses accurately identified the culprit from the culprit-present lineup after receiving the warning. Rather, the instruction serves to alert witnesses to the possibility that the culprit is not in the lineup. Thus, in cases in which the lineup does not contain the culprit, witnesses who receive this instruction may be less likely to rely on a relative-judgment process to make an identification. It should be noted that research using the removal-without-replacement procedure described above always included the "may or may not be present" instruction, and witnesses still sometimes failed to detect the absence of the perpetrator in culprit-absent lineups, thereby making inaccurate identifications. However, the rate at which these mistaken identifications occur is much lower when witnesses are given this pre-lineup admonition, leading researchers to recommend that all lineups include this instruction.

The underlying theme that has emerged through the scientific study of eyewitness identifications is that witnesses' identification behavior is a reflection of multiple other factors besides the strength of their memory. The makeup of the photo lineup and witnesses' expectations regarding the presence of the culprit greatly influence identification choices, and although the "may or may not be present" instruction cuts down on mistaken identifications, witnesses still have a tendency to rely on relative judgments. In an attempt to reduce this tendency, researchers developed an innovative lineup procedure called the sequential lineup, which involves presenting the lineup photos in a sequential fashion rather than simultaneously.[14] Hence, the eyewitness views only one lineup member at a time and makes a decision regarding each person before viewing another lineup member. The theoretical basis of this method is that it reduces the natural propensity for eyewitnesses to make relative judgments. Compared to the traditional simultaneous procedure, the sequential procedure produces a lower rate of mistaken identifications with little loss in the rate of accurate identifications.

CERTAINTY (AND VIEW AND ATTENTION) MALLEABILITY

Mistaken identification per se does not put an innocent person at risk for wrongful conviction. Instead, it is a mistaken identification from an eyewitness who is *highly certain* that runs the high risk of wrongfully convicting the identified person. The certainty that an eyewitness expresses in his or her identification during testimony is the most powerful single determinant of whether or not observers will believe the eyewitness made an accurate identification.[15] Accordingly, psychological scientists have devoted a great deal of work in recent years to figuring out how mistaken eyewitnesses end up being sure that they have made a correct identification. Indeed, every DNA exoneration case is exactly like that; the witness was mistaken but certain.

"The certainty that an eyewitness expresses... during testimony is the most powerful single determinant of whether or not observers will believe the eyewitness made an accurate identification."

When an eyewitness says, "I am positive that the man sitting in court is the man who robbed me," people naturally presume that the witness is saying, "That person sitting there so closely matches my very good memory for the perpetrator that I can only conclude it is one and the same person." In fact, however, witnesses often express this high certainty not only when the witnesses are mistaken but also when they have identified someone who does not look very much like the actual perpetrator at all. The key to understanding this problem is to recognize that eyewitnesses' expressions of certainty in an identification are actually beliefs or feelings that they are right or wrong about the identification they made. As such, these beliefs or feelings can be influenced by a large number of factors that have little or nothing to do with the accuracy of the identifications or how good a witness's memory is. And as we will describe below, these factors often come into play after witnesses have already made an identification for which they were actually quite uncertain.

Given that witnesses' certainty reports reflect a belief in the likely accuracy of their identification, it is not difficult to imagine that witnesses would feel more certain if they were told by the lineup administrator that they "correctly" picked out the suspect. Indeed, confirming feedback of this sort has pervasive effects on eyewitnesses' memory; not only does it inflate witnesses' current certainty, but it also distorts witnesses' retrospective reports of how certain they recall having been at the time of the identification as well as distorting their recollections about the witnessing experience. This "post-identification feedback effect" was first demonstrated in an experiment in 1998, in which 352 witnesses viewed a crime video and made mistaken identifications from a culprit-absent lineup. Following their identification, some witnesses were told "Good, you identified the suspect," whereas others were not told anything.[16] All witnesses then answered a number of testimony-relevant questions about view ("How good was the view you had of the culprit?" "How well could you make out details of the culprit's face?"), attention ("How much attention did you pay to the culprit's face?"), and certainty ("At the time of your identification,

13. Roy S. Malpass & Patricia G. Devine, *Eyewitness Identification: Lineup Instructions and the Absence of the Offender*, 66 J. APPLIED PSYCHOL. 482 (1981).
14. See the most recent meta-analysis (quantitative review) of the sequential versus simultaneous difference. Steblay et al., *supra* note 5, at 99-139.
15. Gary L. Wells, Mark Small, Roy S. Malpass, Steven Penrod, Solomon Fulero, & C. A. Elizabeth Brimacombe, *Eyewitness Identification Procedures: Recommendations for Lineups and Photospreads*, 23 LAW & HUM. BEHAV. 603 (1998).
16. Gary L. Wells & Amy L. Bradfield, *"Good, You Identified the Suspect": Feedback to Eyewitnesses Distorts Their Reports of the Witnessing Experience*, 83 J. APPLIED PSYCHOL. 360 (1998).

"[E]yewitness researchers have made two key recommendations in an effort to preserve witness confidence as an indicator of identification accuracy."

how certain were you that you identified the actual culprit?"). Results of that first study and dozens of subsequent studies have shown that confirming feedback strongly inflates witnesses' estimates of how good their view was, how well they could make out details of the culprit's face, how closely they attended to the culprit during the crime, and how certain they recall having been at the time of the identification. It is important to note that these inflated reports are distortions; after all, the feedback did not occur until after the identification was made.

There are many other factors that can occur post-identification that compromise the integrity of an eyewitness's testimony. For example, repeatedly questioning the witness, briefing the witness about what questions might be encountered in a cross-examination, and informing a witness that a co-witness supposedly made the same identification decision have all been found to inflate witness confidence, independent of identification accuracy.[17] Furthermore, once a witness is exposed to post-identification information of this nature, his or her ability to revert to pre-feedback judgments regarding certainty, attention, view, etc., is, in effect, lost. And there is often no record of whether this type of post-identification suggestion took place, making it impossible to judge whether the witness's retrospective certainty report has been contaminated by new information. For this reason, eyewitness researchers have made two key recommendations in an effort to preserve witness confidence as an indicator of identification accuracy. First, the lineup should always be administered by someone who is kept "blind" to the identity of the suspect in the lineup. It is well established in the psychological literature that a person's expectations can affect the behavior of others, whether it be through inadvertent nonverbal communications or overt suggestion. In the case of an identification task, the lineup administrator's knowledge or expectations about the suspect could influence the manner in which the witness behaves. A simple way to avoid this issue is to ensure that the person administering the lineup is not aware of which lineup member is the suspect (*i.e.*, "double-blind" administration). Under these conditions, the lineup administrator could not be a source of external influence on the witness. Second, a certainty statement should always be recorded immediately following the identification decision. A confidence measure taken under double-blind conditions would provide a pure measure of the eyewitness's memory-based confidence. If the witness's certainty becomes inflated later on, then the initial measure of certainty can provide a reference point for the witness's true confidence at the time of the identification.

THE ROLE OF MEMORY STRENGTH

As a general rule, all problems with eyewitness-identification evidence are compounded when memory strength is weaker. So, for example, the tendency to rely on relative judgments is stronger when the witness has a weaker memory. Hence, the removal-without-replacement effect, the influence of poorly chosen lineup fillers, and the failure to properly instruct the witness prior to the lineup are all more robust when the eyewitness's memory is weaker. Likewise, the post-identification feedback effect is stronger when the witness has a weaker memory. Therefore, it is critical that trial judges appreciate the myriad factors that contribute to weak memories. For instance, we know that normal human vision does not permit a clear recognition of faces from distances of more than about 200 feet (and that assumes excellent lighting).[18] The use of a weapon by a perpetrator tends to impair memory for the perpetrator's face because it draws attention to the weapon and, hence, less time is spent looking at the face.[19] We know that cross-racial identification is less reliable than within-race identification because of the ineffective strategies for processing faces of people from another race than our own.[20]

Some variables that make eyewitness memory weaker might seem at first glance to be common sense. But, as cognitive psychologists have long documented, common sense has certain illusory properties that permit it to "go both ways."[21] For example, one might argue that if someone threatened or frightened you, you would never forget that face and the person's image would become permanently ingrained in your memory. It makes a certain common sense to accept that argument. But, in fact, the opposite is true. Events that evoke fear and stress actually impair memory for the details of the event, including

17. Gary. L. Wells, Tamara. J. Ferguson, & Roderick. C. L. Lindsay, *The Tractability of Eyewitness Confidence and Its Implications for Triers of Fact*, 66 J. APPLIED PSYCHOL. 688 (1981); Elizabeth Loftus & Gary L. Wells, *The Malleability of Eyewitness Confidence: Co-Witness and Perseverance Effects*, 79 J. APPLIED PSYCHOL. 714 (1994); John. S. Shaw III, & Kevin. A. McClure, *Repeated Postevent Questioning Can Lead to Elevated Levels of Eyewitness Confidence*, 20 LAW & HUM. BEHAV. 629 (1996).
18. Geoffrey R. Loftus & Erin M. Harley, *Why Is It Easier to Identify Someone Close Than Far Away?*, 12 PSYCHONOMIC BULL. & REV., 43-65 (2005).
19. Nancy M. Steblay, *A Meta-Analytic Review of the Weapon Focus Effect*, 16 LAW & HUM. BEHAV., 413-24 (1992).
20. Christian A. Meissner & John C. Brigham, *Thirty Years of Investigating the Own Race Bias in Memory for Faces: A Meta Analytic Review*, 7 PSYCHOL. PUB. POL'Y. & L. 3 (2001). One of the best interpretations for the cross-race identification problem is that when people see a face from their own race, they notice ways in which it is different from other members of their own race, whereas when they see a face from another race, they notice how it differs from faces of people from other races. Daniel T. Levin, *Race as a Visual Feature: Using Visual Search and Perceptual Discrimination Tasks to Understand Face Categories and the Cross-Race Recognition Deficit*, 129 J. EXPERIMENTAL PSYCHOL.: GEN. 559 (2000). The latter strategy is, of course, totally ineffective for picking the person from a lineup in which all members are the same race as the perpetrator.
21. Baruch Fischhoff, *Hindsight ≠ Foresight: The Effect of Outcome Knowledge on Judgment Under Uncertainty*, 1 J. EXPERIMENTAL PSYCHOL.: HUM. PERCEPTION & PERFORMANCE 288 (1975).

the face of the person who evoked the reaction.[22] This too makes common sense if one realizes that the primary response to fear is "fight or flight," which is an automatic self-preservation mechanism that absorbs the cognitive capacity of the person and leaves little brain capacity for forming long-term memories. Part of the reason that people generally buy the idea that stress and fear produce better memory (when in fact they produce poorer memory) is because of a confusion about the level of memory that is operating. It is true that if someone threatens you or points a gun at you, you will never forget that the event happened. But that is not the same as having formed a reliable memory for the details of the event, such as the precise facial characteristics of the perpetrator.

The general principle that suggestion (*e.g.*, from a biased lineup or from post-identification feedback) has its greatest effects when the witness's memory is weaker needs to be kept in perspective. Suggestion effects are likely to be moderated only when the memory is extremely good. So, for instance, a victim who is abducted by an unmasked person and held captive for hours or days in which the abductor's face is in full view is not likely to be easily influenced by suggestion regarding the identity of the abductor. Generally speaking, however, eyewitnesses see the perpetrator for only minutes, sometimes even seconds, often under poor viewing conditions, while frightened or confused, under cross-racial conditions, and so on. Hence, the failure to properly instruct a witness prior to a lineup, the use of fillers who do not fit the description of the perpetrator, the failure to use double-blind procedures, and the failure to secure a certainty statement at the time of the identification are serious problems in almost any eyewitness-identification case.

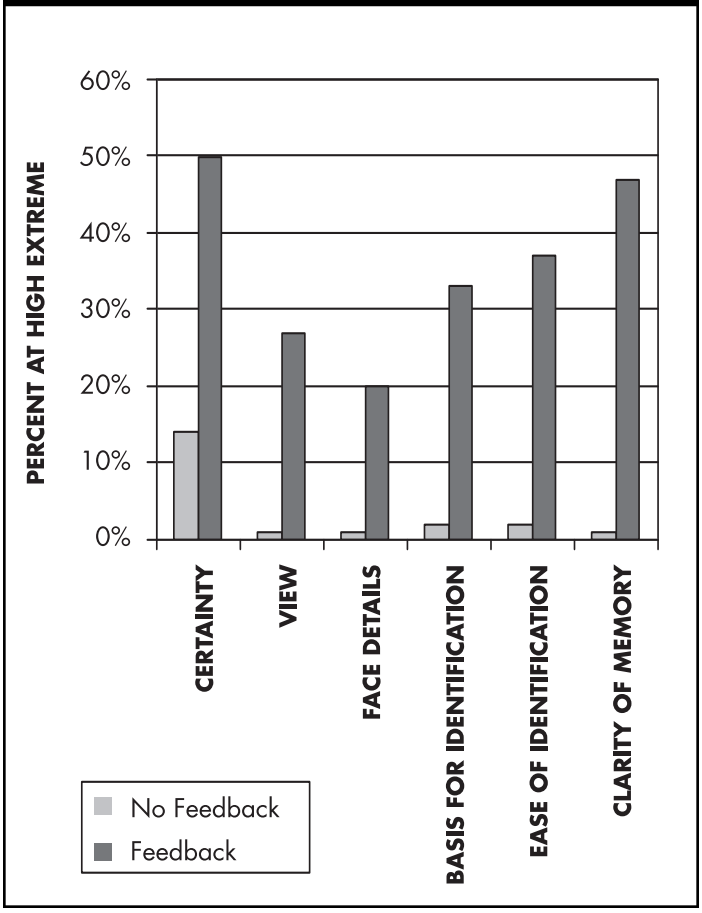
ASSESSING RELIABILITY AT THE TRIAL-COURT LEVEL

Trial courts across the United States tend to rely on one or another version of the U.S. Supreme Court's 1977 test as spelled out in *Manson v. Braithwaite*[23] (hereafter called *Manson*) to make rulings in suppression hearings. Although many individual states have their own version of *Manson*, the guidelines all revolve around the same general proposition: a two-pronged test that inevitably rests on the "totality of the circumstances." But within the language and process of the *Manson* test rests a huge problem that has been identified by eyewitness scientists.[24] This problem helps explain why trial courts are not likely to be able to weed out unreliable identifications using the *Manson*-type approach.

The *Manson* test functions as a two-pronged assessment designed to evaluate the likely reliability of an eyewitness's identification. The first prong involves determining whether the identification procedure was unnecessarily suggestive to begin with. Suggestive procedures include using a show-up procedure when the police could have conducted a lineup, conducting a lineup in which the suspect stood out, failing to tell the eyewitness that the culprit might not be in the lineup, showing the witness a photo of the suspect before conducting a lineup, telling a witness that his or her choice was correct, or conducting a second lineup procedure in which the only person in common was the suspect. If the procedure is not believed to have involved suggestion, then the identification evidence is admitted. If the procedure is found to have contained unnecessary suggestion, then the second stage of the test pits the distorting influence of the suggestive procedure against five criteria intended to assess reliability. These criteria include the witness's opportunity to

"[W]ithin the language and process of the *Manson* test rests a huge problem that has been identified by eyewitness scientists."

FIGURE 1. THE POST-IDENTIFICATION FEEDBACK EFFECT: PERCENTAGES OF EYEWITNESSES WHO SCORED AT THE EXTREME (*E.G.*, RECALLING THAT THEY WERE TOTALLY CERTAIN) WITH AND WITHOUT CONFIRMING FEEDBACK



22. Charles A. Morgan et al., *Accuracy of Eyewitness Memory for Persons Encountered During Exposure to Highly Intense Stress*, 27 Int'l J.L. & Psychiatry 265 (2004).
23. Manson v. Braithwaite, 432 U.S. 98 (1977).
24. *See* Gary L. Wells & Deah S. Quinlivan, *The Eyewitness Post-Identification Feedback Effect: What Is the Function of Flexible Confidence Estimates for Autobiographical Events?*, 23 Applied Cognitive Psychol. 751 (2009), for a much more detailed analysis of the problem with reconciling Manson with the science on eyewitness identification.

"Suggestive procedures almost guarantee that witnesses will pass the *Manson* test (because it will inflate their certainty, attention, and view 'scores')."

view the offender, the witness's degree of attention during the crime, the level of certainty demonstrated at the time of identification, the accuracy of the witness's description of the offender, and the time elapsed between the crime and the pretrial identification. The *Manson* test is intended to determine whether the identification, despite having involved suggestive procedures, is nevertheless reliable.

There is nothing inherently wrong with the idea that determinations regarding the reliability of an identification should be made by weighing a set of reliability factors against the suggestion itself. However, when *Manson* was decided by the U.S. Supreme Court in 1977, there was no scientific literature on eyewitness identification. The factors spelled out to assess reliability were based on the commonsense notions of the court at the time and have since been found to perform quite poorly in predicting reliability, especially for cases in which the identification involved suggestive procedures.

The first thing to note about these criteria is that three of the five criteria are self-reports from the witness (view, attention, and certainty). Although there are occasions in which a witness's statement about view might be contrasted with objective measures (such as when a witness claims to have been 30 feet away whereas reconstruction of the crime scene shows the distance to have been 100 feet), view is generally assessed simply by asking witnesses if they had a good view and could make out details of the face. Similarly, attention and certainty are subjective judgments and cannot be gauged against objective measures. There are a number of problems with people's estimates of their view, attention, and certainty. But our primary concern about these three self-report variables is that they are inflated by the suggestive procedures themselves. The use of suggestive procedures can lead the eyewitness to enhance (distort) his or her retrospective self-reports in ways that help ensure the witness's high standing on these *Manson* criteria, thereby leading to a dismissal of the suggestiveness concern. The consequence of this is that the presence of suggestion is likely to always result in admission of the eyewitness-identification evidence. *Manson* is flawed in such a way that the very presence of suggestive procedures at the time of the identification will make it almost certain the witness will pass the admissibility test.

The other two *Manson* criteria (description and time elapsed) are not much better predictors of reliability. Studies examining the relations between descriptions and identification accuracy have found no meaningful correlation between the two.[25] What is perhaps most puzzling about using the match of the witness's description to the identified person as a measure of reliability is that one would expect the identified person to match the description; after all, it was probably because he or she fit the description that a person was placed in the lineup in the first place. But sometimes, the witness manages to identify from a lineup a suspect who does not fit the initial description of the culprit (*e.g.*, the identified person has an apparent scar or a tattoo that was not included in the witness's prior description). After the identification is made, however, the witness's description may begin to change, now incorporating this aspect of the person's appearance into descriptions that are given later on. It is for this reason that the judge and the court must be very careful when assessing the match between the identified person and the witness's description, ensuring that the description being examined is the description that was given prior to the occurrence of an identification procedure. Otherwise, there is no way to distinguish between parts of the description that were actually recollected from the witnessed event and ones that were gleaned from the identification.

As for the criteria concerning the time elapsed between the crime and the pretrial identification, this factor in and of itself should not be a primary component upon which reliability evaluations are made. It is possible for a witness to positively identify the perpetrator from a lineup two years after the crime occurred, just as it is possible for the witness to fail to identify the perpetrator only minutes after the crime occurred. The important thing to know about memory as it relates to the passage of time is that the greatest drop in memory occurs very soon after the witnessed event—even within minutes. Thus, there may be little difference between a 1- and 2-day delay or even a 30- and 60-day delay. Although the time elapsed between the crime and identification can provide a reference point to assess likely memory strength, it should not be treated as a sole determinant of reliability.

It is important to highlight that the 203 DNA exonerations of individuals who were mistakenly identified and wrongfully convicted had the benefit of *Manson* when they were tried. The framework of *Manson* makes it absurdly difficult to pinpoint and exclude identifications resulting from even the most egregious forms of suggestion, and it fails to provide an incentive for law enforcement to reduce suggestiveness. In fact, we argue that it may actually create an incentive favoring suggestive procedures. Suggestive procedures almost guarantee that witnesses will pass the *Manson* test (because it will inflate their certainty, attention, and view "scores"). If the use of suggestive procedures rarely results in suppression of the identification, then there is no reason for law enforcement to avoid using these procedures, especially since suggestive identification procedures lead the witness to be more credible to the judge and jury at the time of trial. Hence, what incentive is there for law enforcement to avoid suggestive procedures and, conversely, what are the incentives to continue to use suggestive procedures?

25. *See* Melissa A. Piggot & John C. Brigham, *Relationship Between Accuracy of Prior Description and Facial Recognition*, 70 J. Applied Psychol. 547 (1985). *See also* Gary L. Wells, *Verbal Descriptions of Faces from Memory: Are They Diagnostic of Identification Accuracy?*, 70 J. Applied Psychol. 619 (1985).

When considering the predicament that has resulted from the reliance on a *Manson*-type test for determinations about identification evidence, it is useful to remember that full suppression is not the only option for dealing with the presence of suggestion. There are many other case-tailored alternatives that can limit the testimony to those elements of the identification that were likely uncontaminated by the suggestion. For example, defense attorneys have the option of crafting motions in limine to limit rather than totally exclude the identification (*e.g.*, not permitting the witness to testify about his or her certainty when post-identification feedback has contaminated certainty). Other remedies that defense attorneys can ask for include judicial instructions or expert testimony. Full admission without factoring in a cost for the suggestion not only puts the accused individual at a risk of wrongful conviction but also imposes no repercussions for the use of suggestive procedures, thereby perpetuating the failure to deter law enforcement from using these procedures.

SUMMARY AND CONCLUSIONS

Mistaken-eyewitness identification is the primary cause of convictions of the innocent, and trial judges are one of the safeguards that can prevent these miscarriages of justice. But an effective trial judge needs more than a conventional legal understanding of the problems associated with eyewitness-identification evidence. A mature social science literature has emerged that shows a tendency for conventional legal understandings (a) to fail to appreciate the power of suggestive procedures, (b) to rely too much on eyewitness-identification certainty, (c) to have faulty views of factors that impair memory, and (d) to generally fail to create disincentives for suggestive procedures.

Trial judges are the gatekeepers to the eyewitness-identification evidence that is permitted in court. How are judges to learn about the social science that can increase the sophistication of their admission decisions? Continuing judicial education programs would be one way to learn more. The National Center for State Courts, the American Judges Association, and the American Judicature Society might also develop programs that incorporate the social science literature on eyewitness identification and disseminate that information through workshops, presentations, and written materials. For some eyewitness cases, the use of eyewitness experts in court can be yet another mechanism for judges to learn more about some of the issues associated with eyewitness identification. But, the eyewitness-identification literature is a highly specialized area in scientific psychology, so simply drawing on the testimony of a psychologist from a local community college would not necessarily be a good idea. Generally speaking, a good eyewitness-identification expert is one who has published research on eyewitness issues in peer-reviewed journals and regularly reviewed the published research of other eyewitness experts. The use of an eyewitness expert at a pretrial hearing (rather than or in addition to trial) can be particularly useful because it affords the judge a relatively unconstrained setting (in the absence of jurors) in which to question the expert. In difficult cases, the judge could then consider permitting the expert to also testify at trial.

There is a high cost to mistaken-eyewitness identifications. Any time an innocent person is convicted, the guilty party goes free, which is a fact that has played out visibly in the DNA exoneration cases. Moreover, trust in the legal system hinges very critically on its ability to avoid convicting the innocent, a trust that has suffered some significant blows in the news stories that have surrounded the 203 (and counting) DNA exoneration mistaken-eyewitness cases.

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A Method for Analyzing the Accuracy of Eyewitness Testimony in Criminal Cases

Richard A. Wise & Martin A. Safer

Although no one knows precisely how many wrongful convictions occur each year, a study examining DNA-exoneration cases estimated that in 3.3% to 5% of the capital rape-murder convictions in the U.S. from 1982-1989, the defendants were innocent.[1] If this percentage of wrongful convictions applied to other types of crimes, there would be 33,000 to 50,000 wrongful felony convictions per year in the U.S.[2]

Eyewitness error is the leading cause of wrongful convictions.[3] In fact, Professor Gary Wells and other prominent eyewitness researchers stated that "cases of proven wrongful convictions of innocent people have consistently shown that mistaken eyewitness identification is responsible for more of these wrongful convictions than all the other causes combined."[4] For example, in the first 271 DNA-exoneration cases, eyewitness error occurred in 75% of the cases.[5] In many of the DNA-exoneration cases, multiple eyewitnesses identified the defendant as the perpetrator of the crime and several of the defendants were on death row when they were exonerated.[6]

Because eyewitness evidence is frequently the sole or primary evidence in a criminal case, the justice system needs to enhance the ability of judges, other legal professionals, and jurors to assess its accuracy.[7] This article presents a method for analyzing the accuracy of eyewitness testimony that can help judges achieve this vital goal (hereafter referred to as "Method").

It consists of four steps. First, determine if during the interviews law enforcement obtained the maximum amount of information from the eyewitness, did not contaminate the eyewitness's memory of the crime, or artificially increased the eyewitness's confidence. Second, ascertain if the identification procedures in the case were fair and unbiased. Third, evaluate how the eyewitness factors at the crime scene likely affected accuracy. Finally, make conclusions about the probable accuracy of the eyewitness testimony. Scientific guidelines for making these determinations are discussed.

This article also describes how judges can use this Method to better perform judicial functions related to eyewitness testimony in criminal cases, such as determining whether to grant a motion to suppress an eyewitness identification, deciding whether an eyewitness expert's testimony should be admitted at trial, and evaluating eyewitness accuracy in bench trials and on appeal.

THE CAUSES OF EYEWITNESS ERROR

To understand why eyewitness error occurs and what safeguards are needed to prevent and reduce eyewitness error, it is first necessary to understand the nature of memory.[8] Although an eyewitness's memory of a crime can be reasonably accurate, it does not operate like a video camera.[9] Accordingly, it is not like a videotape passively created that the eyewitness can replay at will to create an exact replica of the crime. Instead, memory is an active, ongoing, dynamic process that consists of four stages: perception, encoding, storage, and retrieval.[10]

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Footnotes

1. D. Michael Risinger, *Innocents Convicted: An Empirically Justified Factual Wrongful Conviction Rate*, 97 J. Crim. L. & Criminology, 761, 806 (2007).
2. *Id.*; *see* Richard A. Wise et al., *How to Analyze the Accuracy of Eyewitness Testimony in a Criminal Case*, 42 Conn. L. Rev. 435, 440-41 (2009). This article contains a more detailed explanation of the Method.
3. *See, e.g.,* C. Ronald Huff, *Wrongful Conviction: Societal Tolerance of Injustice*, 4 Res. in Soc. Probs. & Pub. Pol'y 99, 103 (1987); Arye Rattner, *Convicted But Innocent*, 12 Law & Hum. Behav. 283, 289 (1988).
4. Gary L. Wells et al., *Eyewitness Identification Procedures: Recommendations for Lineups and Photospreads*, 22 Law & Hum. Behav. 603, 605 (1998).
5. *Eyewitness Identification*, The Innocence Project (2011), *available at* http://www.innocenceproject.org/understand/Eyewitness Misidentification.php (last visited May 18, 2011).
6. Rob Warden, *How Mistaken and Perjured Eyewitness Identification Testimony Put 46 Innocent Americans on Death Row*, Nw. Univ. Sch. of Law, Ctr. on Wrongful Convictions, *available at* http://www.law.northwestern.edu/wrongfulconvictions/aboutus/; Wells et al., *supra* note 4, at 603.
7. *See* Daniel Goleman, *Studies Point to Flaws in Lineups of Suspects*, N.Y. Times, Jan. 17, 1995, at C1.
8. *See* Wise et al., *supra* note 2, at 454-64 (for a more detailed explanation of why eyewitness error occurs).
9. John C. Brigham et al., *Disputed Eyewitness Identification Evidence: Important Legal and Scientific Issues*, 36 Ct. Rev. 12, 13 (1999).
10. Edith Greene et al., Wrightsman's Psychology and the Legal System, 129-32 (6th ed. 2007).

Perception involves noticing an event or object and paying attention to it.[11] Consequently, to recall a crime an eyewitness must first notice and attend to it. Expectations, needs, attitudes, interests, biases, and knowledge affect what an eyewitness attends to during a crime.[12] Thus, a hairstylist may pay more attention to the perpetrator's hair than other eyewitnesses.

Encoding, the second stage of memory, consists of the mental work required to transform an eyewitness's perceptions into a memory of the crime.[13] Normally an eyewitness is unaware of the process of encoding. Encoding involves interpretation and making inferences, so encoding is colored by the meaning the eyewitness gives to the crime.[14] This meaning, like one's perceptions, is affected by one's expectations, needs, attitudes, interests, biases, and prior knowledge.[15] Moreover, eyewitness factors present during the crime, such as a weapon, disguise, stress, etc., can interfere with the eyewitness's encoding of the crime. Eyewitnesses can also rapidly forget the details of a crime.[16]

Storage, the third stage of memory, concerns the maintenance of information encoded about the crime.[17] The eyewitness's storage of information about a crime is an active and dynamic process rather than a quiet, warehouse type of storage.[18] Consequently, post-event information from a variety of different sources, such as other eyewitnesses, the police, the prosecutor, or the media can permanently alter the eyewitness's memory of the crime.[19] Generally an eyewitness is unaware that his or her memory has been altered by post-event information that may or may not be accurate.[20] Moreover, the post-event information may not only affect the eyewitness's memory of the crime, but also the eyewitness's ability to identify the perpetrator of the crime.[21]

During retrieval, the final stage of memory, the eyewitness recalls the crime or attempts to recognize the perpetrator during an identification procedure.[22] When an eyewitness recalls a crime, he or she unconsciously reconstructs his or her memory of the crime from several different sources of information.[23] They include the eyewitness's memory of the crime, and to fill in gaps in his or her memory, the eyewitness unknowingly uses his or her expectations, attitudes, beliefs, biases, knowledge of similar events, and post-event information.[24] The eyewitness automatically blends these different sources of information together to create a memory of the crime that appears seamless and coherent but that may contain inaccuracies.[25] Furthermore, the eyewitness's ability to recognize the perpetrator during an identification procedure may be compromised by factors present during the crime (e.g., weapon, disguise, stress, etc.), post-event information, or the passage of time.[26]

Not only is an eyewitness's memory of a crime malleable, but so is an eyewitness's confidence.[27] Many factors can increase an eyewitness's confidence but not his or her accuracy,[28] such as repeated questioning of an eyewitness, confirming feedback (e.g., "Good, you have identified the suspect."), or learning that another eyewitness has identified the suspect.[29] Thus, by the time of trial there is little or no relationship between eyewitness confidence and accuracy.

Post-event information has its greatest effect on an eyewitness's confidence for inaccurate information.[30] Generally the eyewitness is unaware that post-event information has increased his or her confidence. Increases in eyewitness confidence can cause wrongful convictions because eyewitness confidence is usually the most important factor the trier of fact relies upon in evaluating eyewitness accuracy.[31]

THE SAFEGUARDS THAT ARE NECESSARY TO PREVENT AND REDUCE EYEWITNESS ERROR

Eyewitness researchers have not only discovered what factors affect eyewitness accuracy during the crime, but have also discovered what safeguards are necessary to minimize eyewitness errors during interviews and identification productions.[32] Conducting fair and unbiased eyewitness interviews and identification procedures is the best means available to the criminal justice system to reduce eyewitness error.[33]

For example, researchers have learned that during eyewitness interviews, law enforcement officers frequently make three types of errors: (1) they fail to obtain much of the information that the eyewitness knows about the crime; (2) they contami-

11. Wayne Weiten, Psychology: Themes and Variations: Briefer Version 206 (7th ed. 2008).
12. Curt R. Bartol & Anne M. Bartol, Psychology and Law: Theory, Research and Applications 228 (3d ed. 2004).
13. *Id.*
14. *Id.*
15. *Id.*
16. Richard A. Wise et al., *A Survey of Defense Attorneys' Knowledge and Beliefs About Eyewitness Testimony*, The Champion, Nov. 2007, at 23.
17. Greene et al., *supra* note 10, at 130.
18. *Id.*
19. *See, e.g.*, Bartol & Bartol, *supra* note 12, at 229; Ronald P. Fisher, *Interviewing Victims and Witnesses of Crime*, 1 Psych. Pub. Pol'y & L. 732, 740 (1995).
20. Bartol & Bartol, *supra* note 12, at 228.
21. Elizabeth F. Loftus & Edith Greene, *Warning: Even Memory for Faces May Be Contagious,* 4 Law & Hum. Behav. 323, 333 (1980).
22. Weiten, *supra* note 11, at 214-16.
23. Mark Costanzo, Psychology Applied to the Law 180 (2004).
24. *Id.*
25. *Id.* at 228.
26. Wise et al., *supra* note 16, at 23.
27. Wells, *supra* note 4, at 624.
28. Gary L. Wells et al., *From the Lab to the Police Station: A Successful Application of Eyewitness Research*, 55 Am. Psychologist 581, 586 (2000).
29. *See, e.g.*, John S. Shaw III & Kimberley A. McClure, *Repeated Postevent Questioning Can Lead to Elevated Levels of Eyewitness Confidence*, 20 Law & Hum. Behav. 629, 630 (1996).
30. Donald P. Judges, *Two Cheers for the Department of Justice's Eyewitness Evidence: A Guide for Law Enforcement*, 53 Ark. L. Rev. 231, 249 (2000).
31. Wells, *supra* note 4, at 620.
32. Richard A. Wise et al., *A Tripartite Solution to Eyewitness Error*, 97 J. Crim. L. & Criminology 807, 842-65 (2007).
33. *Id.* at 865.

nate the eyewitness's memory of the crime with post-event information; and (3) they increase the eyewitness's confidence.[34]

In the 1980s, Fisher and Geiselman began developing a method of interviewing eyewitnesses that significantly reduced law enforcement errors.[35] Scientific studies comparing their cognitive interview with the standard law enforcement interview show that it increases accurate information obtained from eyewitnesses by 35% to 75%.[36] The cognitive interview also decreases the probability that law enforcement will contaminate the eyewitness's memory of the crime or increase the eyewitness's confidence.[37]

Because of the salient role identification procedures play in eyewitness error, researchers have also devoted much time and effort to studying them. In determining what safeguards are necessary for fair and unbiased identification procedures, researchers have learned that many of the same safeguards needed for a valid experiment are also required for fair and unbiased identification procedures.[38] For instance, scientists have long known that they must implement safeguards for experiments to prevent their own biases and expectations from unintentionally affecting the results.[39] Biases and expectations threaten the validity of an experiment because people tend to test their hypotheses in a manner that will confirm them and because of the self-fulfilling nature of expectations.[40] Expectations and biases can also affect the validity of identification procedures.

The lineup-as-experiment analogy helps us identify errors that law enforcement officers often make when conducting identification procedures. They include:

> [T]he presence of demand characteristic (e.g., pressuring the eyewitness to make a choice), the influence of confirmation biases (e.g., asking the eyewitness specifically about the suspect while not asking those same questions about the distracters), the facilitation of response biases (e.g., encouraging a loose recognition criterion threshold in the eyewitness), making inferences from small sample sizes (e.g., making strong judgments of validity based on only one eyewitness), not using control groups (e.g., failing to see if people who did *not* witness the crime [but who have the eyewitness's description of the perpetrator] can identify the suspect), selective recording and interpretation of data (e.g., finding significance in an identification of the suspect, but ignoring the outcome if the eyewitness makes a non-identification), leaking of the hypothesis (e.g., making it obvious to the eyewitness which person in the lineup is the suspect), and a host of other possible confounds.[41]

In sum, to prevent and reduce eyewitness errors, law enforcement must implement safeguards that ensure that the identification of a suspect is the product of the eyewitness's memory and not how the identification procedure was conducted.

The National Institute of Justice (hereafter "NIJ"), which is the research arm of the U.S. Department of Justice, recognizes the importance of eyewitness research in preventing eyewitness error. Eyewitness research forms the basis for the NIJ's recommendations for conducting interviews and identification contained in its *Eyewitness Evidence: A Guide for Law Enforcement* (hereafter "Guide") and its *Eyewitness Evidence: A Trainer's Manual for Law Enforcement* (hereafter "Trainer's Manual").[42] The purposes of the NIJ's Guide and Trainer's Manual are to develop improved procedures for the collection and preservation of eyewitness evidence for U.S. law enforcement agencies[43] and provide them with training in the guidelines.[44]

Finally, to significantly reduce eyewitness error, the criminal justice system must view eyewitness evidence as a type of trace evidence.[45] Like other types of trace evidence, such as fingerprints, DNA, and firearm patterns, eyewitness evidence has a physiological basis (i.e., biochemical changes in the eyewitness's brain).[46] Consequently, the accuracy of eyewitness testimony, like other types of trace evidence, depends in large part on the use of proper scientific procedures in collecting and preserving it. In short, before admitting eyewitness evidence, a judge should always first determine if valid scientific procedures were followed in producing it. If they were not followed, this failure should generally weigh heavily against admitting the eyewitness testimony at trial just as it would for DNA, fingerprints, ballistics, and other types of trace evidence.[47]

WHY JUDGES NEED A METHOD FOR ANALYZING THE ACCURACY OF EYEWITNESS TESTIMONY

Judges must be able to assess eyewitness accuracy so they can better evaluate its probative value in criminal cases and help prevent wrongful conviction from erroneous eyewitness testimony. For example, trial judges need this ability when determining whether to admit a pretrial eyewitness identification at trial, to permit an eyewitness to make an in-court identification, and to allow an eyewitness expert to testify.[48] They also require this ability when deciding eyewitness evidentiary issues, drafting jury instructions about eyewitness testimony, and evaluating eyewitness accuracy in bench trials.[49] Appellate judges must assess eyewitness accuracy when deciding if the

34. Ronald P. Fisher, *Interviewing Victims and Witnesses of Crime*, 1 PSYCH. PUB. POL'Y & L. 732, 752-56 (1995).
35. Wells et al., *supra* note 28, at 582-83.
36. *Id.* at 584.
37. Fisher, *supra* note 34, at 752.
38. Wells et al., *supra* note 4, at 617-18.
39. WEITEN, *supra* note 11, at 38-40, 48-50.
40. *Id.*
41. Wells et al., *supra* note 4, at 618.
42. Wells et al., *supra* note 28, at 581.
43. NAT'L INST. OF JUSTICE, U.S. DEP'T OF JUSTICE, EYEWITNESS EVIDENCE: A GUIDE FOR LAW ENFORCEMENT (1999) [hereinafter GUIDE] at vii.
44. NAT'L INST. OF JUSTICE, U.S. DEP'T OF JUSTICE, EYEWITNESS EVIDENCE: A TRAINER'S MANUAL FOR LAW ENFORCEMENT III (2003) [hereinafter TRAINER'S MANUAL] at v.
45. Wells et al., *supra* note 4, at 618-19.
46. *Id.*
47. *Id.*
48. Wise et al., *supra* note 2, at 464.
49. *Id.*

TABLE 1: METHOD FOR ANALYZING THE ACCURACY OF EYEWITNESS TESTIMONY

STEP 1: EVALUATING THE EYEWITNESS INTERVIEWS

A. Did the interviews obtain the maximum amount of information from the eyewitness?

B. Did the interviews contaminate the eyewitness's memory?

1. Did they contaminate the eyewitness's memory of the crime?
2. Did they contaminate the eyewitness's memory of the perpetrator of the crime?

C. Did the interviews, identification procedures, other eyewitnesses, prosecutor, media, or some other factor significantly increase the confidence of the eyewitness prior to taking a statement of the eyewitness's confidence in the accuracy of his or her identification?

STEP 2: EVALUATING THE IDENTIFICATION PROCEDURES AND IDENTIFICATION ACCURACY

A. Did one of the following circumstances occur that would make the eyewitness's identification of the defendant presumptively inaccurate?

1. Was the eyewitness interview significantly biased and did the bias pertain to information concerning the description or identity of the perpetrator?
2. Was an identification procedure significantly biased?

B. Because of the nature of memory, the effects of biased interviews and identification procedures on identification accuracy cannot be corrected by later conducting a fair interview and identification procedure. Accordingly, if an eyewitness's memory of the perpetrator of a crime has been significantly contaminated, identification by the eyewitness of the defendant should be considered presumptively inaccurate.

C. Does one of the two exceptions apply to the general rule that an eyewitness's identification is presumptively inaccurate if an eyewitness interview or identification procedure was significantly biased?

1. Did some unusual circumstance exist that overcomes the presumptive inaccuracy of the identification (e.g., the eyewitness knew the perpetrator prior to the crime or had prolonged repeated exposure to the perpetrator)?
2. Was there reliable, valid corroborating evidence that establishes the veracity of the eyewitness testimony?

D. Were the eyewitness interviews and identification procedures fair and impartial or did one of the exceptions to biased interviews and identification procedures apply?
If so, go on to Step 3. If not, the eyewitness's identification should be presumed to be inaccurate.

STEP 3: EVALUATING THE EYEWITNESS FACTORS PRESENT DURING THE CRIME

A. What eyewitness factors during the crime likely increased the accuracy of the eyewitness identification and testimony?

B. What eyewitness factors during the crime likely decreased the accuracy of the eyewitness identification and testimony?

STEP 4: CONCLUSIONS:

1. Was the maximum amount of information obtained from the eyewitness during the interviews?

2. Was a statement of the eyewitness's confidence in the accuracy of his or her identification obtained prior to the eyewitness receiving any feedback?

3. Is there a high, medium, or low probability that the eyewitness's testimony was accurate?

4. Is there a high, medium, or low probability that the eyewitness identification was accurate?

trial court erred in admitting a pretrial identification, permitting an in-court identification, refusing to permit a jury instruction about eyewitness testimony, or failing to admit an eyewitness expert.[50] This ability also helps appellate judges assess whether the eyewitness testimony in a case is sufficiently reliable to affirm a guilty verdict.[51]

Although the ability to assess eyewitness accuracy is essential to judges, scientific studies show that, like other legal professionals and jurors, judges have limited knowledge of eyewitness factors.[52] For example, Wise and Safer surveyed 160 judges about what they know about eyewitness factors, what they believe jurors know about eyewitness factors, and what legal safeguards they would permit attorneys to use to educate jurors about eyewitness factors.[53] The latter two questions are important because, though jurors have limited knowledge of eyewitness factors, the most common reason judges exclude eyewitness-expert testimony is because they believe jurors are knowledgeable about eyewitness factors.[54] Furthermore, expert testimony is the only legal safeguard that has demonstrated any efficacy in educating jurors about eyewitness testimony.[55] Because eight of the questions in the survey were the same or similar to questions used in an earlier survey of eyewitness experts, the judges' responses for these questions were compared to the experts' responses.

The judges in the survey averaged only 55% correct on the 14-item knowledge scale.[56] They also lacked knowledge of many key eyewitness facts, such as jurors' inability to distinguish between accurate and inaccurate eyewitnesses; sequential lineups reduce erroneous eyewitness identification compared with simultaneous lineups; and eyewitness confidence is not related to accuracy at trial.[57] The judges' responses differed significantly from the experts' responses on 5 of 8 questions that they both answered.[58] They also tended to overestimate jurors' knowledge of eyewitness factors compared to the experts and were reluctant to permit eyewitness-expert testimony even though, as previously mentioned, it is the only legal safeguard that has shown any effectiveness in educating jurors about eyewitness factors.[59]

Other studies of judges' knowledge of eyewitness factors have produced similar results.[60] Judges' lack of knowledge is not surprising. Judges receive little training about eyewitness testimony, the effect of many eyewitness factors on eyewitness accuracy is counterintuitive, and judges do not receive feedback on which eyewitness made inaccurate identification in criminal cases and what factors caused their inaccuracy.[61]

More importantly, even if judges were knowledgeable about eyewitness factors, they would still have difficulty assessing eyewitness accuracy in criminal cases. This result would likely occur because the ability to assess eyewitness accuracy is not just a question of knowledge, but also the ability to integrate that knowledge into the facts of a case.[62] Research shows that even experts have difficulty applying their knowledge to the facts of a case.[63] Accordingly, what judges need is a method for analyzing the accuracy of eyewitness testimony that will enable them to both identify the relevant eyewitness factors in a criminal case and also apply them to the facts. The Method described in the next several sections can help judges to achieve these essential goals.

METHOD FOR ANALYZING THE ACCURACY OF EYEWITNESS TESTIMONY

Professor Wise has developed a method for analyzing the accuracy of eyewitness testimony that consists of four steps.[64] In the first step, determine if during the interview law enforcement: (a) obtained the maximum amount of accurate information from the eyewitness; (b) contaminated the eyewitness's memory of the crime with post-event information; or (c) increased the eyewitness's confidence.

Obtaining the maximum amount of accurate information from an eyewitness helps prevent wrongful convictions. For example, the most important determinant of whether a crime is solved is the completeness and accuracy of the eyewitness testimony.[65] In addition, detailed and accurate eyewitness testimony increases the probability that the trier of fact will render a correct verdict.[66] It also aids law enforcement officers in obtaining confessions from guilty suspects, allows defense attorneys to more effectively represent innocent defendants, and assists district attorneys in prosecuting guilty defendants.[67]

Determining if an eyewitness's memory has been contami-

50. *Id.*
51. *Id.*
52. *Id.*
53. Richard A. Wise & Martin A. Safer, *A Survey of Judges' Knowledge and Beliefs About Eyewitness Testimony*, 40 Ct. Rev. 6-16 (2003).
54. *Id.* at 7.
55. *Id.*
56. *Id.* at 13.
57. *Id.*
58. *Id.* at 9-11.
59. *Id.* at 11.
60. Tanja Rapus Benton et al., *Eyewitness Memory Is Still Not Common Sense: Comparing Jurors, Judges, and Law Enforcement to Eyewitness Experts*, 20 Applied Cognitive Psychol. 115, 126 (2006); Pär Anders Granhag et al., *Eyewitness Testimony: Tracing the Beliefs of Swedish Professionals*, 23 Behav. Sci. & L. 709, 723 (2005); Svein Magnussen et al., *What Judges Know About Eyewitness Testimony: A Comparison of Norwegian and U.S. Judges*, 14 Psychol. Crime & L. 177, 185 (2008); Richard A. Wise et al., *A Comparison of Chinese Judges' and U.S. Judges' Knowledge and Beliefs about Eyewitness Testimony*, 16 Psychol. Crime & L. 695, 695 (2010).
61. Wise et al., *supra* note 2, at 467.
62. Brian L. Cutler et al., *The Eyewitness, the Expert Psychologist, and the Jury*, 13 Law & Hum. Behav. 311, 313 (1989).
63. Steven D. Penrod & Brian Cutler, *Preventing Mistaken Conviction in Eyewitness Identification Trials: The Case Against Traditional Safeguards*, *in* Psychology and Law: The State of the Discipline 89, 217 (Ronald Roesch et al. eds., 1999).
64. *See* Wise et al., *supra* note 2, at 468-508 (more detailed explanation of the Method and the guidelines for the Method).
65. Fisher, *supra* note 34, at 732.
66. *Id.*
67. *Id.*

nated during the interview is crucial, because, as we have seen, eyewitness memory is malleable. Moreover, once it is altered by post-event information, the eyewitness's original memory of the crime cannot be restored.[68] Post-event information not only affects the eyewitness's memory of the crime but can also impair identification accuracy.[69] Assessing if the eyewitness's confidence has been artificially increased prior to obtaining a statement of the eyewitness's confidence is critical because, as previously mentioned, generally eyewitness confidence is the most important factor the trier of fact uses in evaluating eyewitness accuracy.[70]

The second step in the Method is to evaluate whether the identification procedures in the case were fair and unbiased. (*See* Table I, Step 2.) The 11 scientific guidelines delineated later in this article can be used to make this evaluation.

If significant bias existed in how the eyewitness interview or identification procedures were conducted, the accuracy of the eyewitness testimony is highly questionable unless an exception applies. The exceptions include if the eyewitness conditions were unusually good (e.g., the eyewitness had repeated prolonged exposure to the perpetrator or the eyewitness knew the perpetrator prior to the crime) or if there is reliable, valid evidence corroborating the accuracy of the eyewitness testimony.

Because of the nature of memory, if a biased interview or identification procedure is conducted, the error cannot be corrected by later conducting a fair and unbiased interview or identification procedure.[71] Consequently, if a biased identification was conducted, not only should the eyewitness's identification from the biased identification be presumed inaccurate, but any subsequent identification, even from a fair identification procedure, should also be presumed inaccurate. In contrast, if fair and unbiased interviews and identification procedures were conducted, the eyewitness's testimony and identification are more likely to be accurate even if the eyewitness conditions during the crime were somewhat less than ideal. Therefore, when analyzing the accuracy of eyewitness testimony, always first assess how the eyewitness interviews and identification procedures were conducted.

If no significant bias occurred in the eyewitness interviews or identification procedures or if an exception applies, proceed to the third step in the Method; however, if there was significant bias and it likely affected both the accuracy of the eyewitness testimony and the identification and no exception applies, presume the eyewitness testimony is inaccurate and cease the analysis.

The third step in analyzing eyewitness accuracy assesses how the eyewitness factors during the crime likely affected eyewitness accuracy. Separately list factors that likely increased and factors that likely decreased eyewitness accuracy during the crime. The most common eyewitness factors that affect accuracy are discussed later in this article.

In the final step of the Method, make conclusions about the likely accuracy of the eyewitness testimony in the case by answering the following questions: (a) Did law enforcement obtain the maximum amount of information from the eyewitness? (b) Was the eyewitness's confidence increased prior to taking a statement of confidence from the eyewitness? (c) Is there a high, medium, or low probability that the eyewitness testimony was accurate? (d) Is there a high, medium, or low probability that the identification was accurate?

This Method has several benefits. For instance, it offers a comprehensive analytical framework for both identifying and organizing the many different types of eyewitness factors that affect eyewitness accuracy. Perhaps most importantly, it also helps integrate those eyewitness factors into the analysis of the accuracy of the eyewitness testimony. Thus, the Method divides eyewitness factors into three types: those that pertain to interviews, identification procedures, and the crime scene. It provides a specific order for analyzing the different types of eyewitness factors, concrete guidelines for evaluating them, and specific standards for assessing whether they were likely to produce eyewitness error (i.e., if the interview and identification procedures were substantially biased or the eyewitness factors at the crime scene were poor).

Another advantage to using this Method is that it stresses the importance of conducting fair and unbiased interviews and identification procedures. The Method's emphasis on fair and unbiased interviews and identification procedures is warranted for several reasons. First, not only is this emphasis logical and supported by empirical evidence, but it is also justified because the State can usually control how it conducts interviews and identification procedures and can easily document how they were conducted by videotaping them.[72] In contrast, the State cannot control the eyewitness factors at a crime scene, and usually there is no objective record of them.

Second, requiring the State to conduct fair and unbiased eyewitness interviews and identification procedures in criminal cases is congruent with evidentiary rules providing that proper scientific procedures must be followed for trace evidence to be admitted at trial.[73]

Third, this emphasis gives the State a strong incentive for conducting fair and unbiased interviews and identification procedures because they will substantially strengthen the State's case.

Fourth, the State can conduct fair and unbiased eyewitness interviews without incurring either a significant financial or administrative burden.[74]

Finally, the most potent means available to the legal system to prevent and reduce eyewitness error is by conducting fair and unbiased eyewitness interviews and identification procedures.[75]

We recognize there will be limited circumstances when pol-

68. *See, e.g.*, BARTOL & BARTOL, *supra* note 12, at 229.
69. Loftus & Greene, *supra* note 21, at 333.
70. Wells at al., *supra* note 4, at 620.
71. *See* BARTOL & BARTOL, *supra* note 12, at 229.
72. Wells et al., *supra* note 28, at 582-87; Wise et al., *supra* note 32, at 864-65.
73. FED. R. EVID. 403, 702, 901.
74. Amy Klobuchar et al., *Improving Eyewitness Identifications: Hennepin County's Blind Sequential Lineup Pilot Project*, 4 CARDOZO PUB. L. POL'Y & ETHICS 381, 409 (2006).
75. Wise et al., *supra* note 32, at 865.

icy considerations will necessitate the admission of eyewitness testimony even though the Method indicates that the eyewitness testimony should be presumed inaccurate. We are referring to circumstances where law enforcement acted in good faith but was forced to use a suggestive procedure because of exigent circumstances (e.g., when law enforcement used a show-up rather than a photo array or lineup because a suspect was apprehended shortly after the crime).

The next three sections discuss scientific guidelines for evaluating the fairness of eyewitness interviews and identification procedures and eyewitness factors that are commonly present during a crime. The appendix contains a form that will help judges apply this Method to criminal cases.

EVALUATING THE EYEWITNESS INTERVIEW (TABLE 1, STEP 1)

As stated previously, law enforcement often makes three types of errors when it interviews eyewitnesses: (1) It fails to obtain the maximum amount of information from the eyewitness; (2) it contaminates the eyewitness's memory of the crime with post-event information; and (3) it increases the eyewitness's confidence.

The following guidelines derived from scientific research, and the Guide and Trainer's Manual, can be used to assess whether the eyewitness interviews were conducted properly. The factors for evaluating if law enforcement obtained the maximum amount of information from the eyewitness are divided into three categories: doing pre-interview preparation, conducting the interview, and concluding the interview.

A. FACTORS RELEVANT TO MAXIMIZING THE INFORMATION OBTAINED FROM THE EYEWITNESS:[76]

1. **Pre-interview preparation:**
   a. **When circumstances permit, the interview should be held as soon as possible after the crime.**[77] (Eyewitnesses forget the details of a crime very quickly, so the interview should be conducted as soon as the eyewitness is capable of being interviewed and the exigencies of the investigation permit.[78])
   b. **The interviewer should review all information about the crime prior to the interview.** (Preparation results in a more thorough and complete interview.[79])
   c. **The interview should be conducted in a comfortable environment, and distractions and interruptions should be minimized.** (Under these conditions, the eyewitness will recall more information.)[80]
   d. **The resources necessary to conduct the interview (e.g., pens, notepad, video recorder, interview room, etc.) should be obtained prior to the interview so it does not have to be interrupted to get these items.**[81] (Interruptions interfere with the eyewitness's ability to remember the crime.)
   e. **The eyewitness interview should be videotaped.**[82] (Videotaping ensures there is an accurate and complete record of the eyewitness interview.)

2. **When conducting the interview the interviewer should:**
   a. **Establish and maintain rapport with the eyewitness and minimize his or her anxiety.** (Eyewitnesses are often traumatized by a crime and a relaxed eyewitness provides more information.[83] The interviewer can establish rapport and minimize an eyewitness's anxiety by showing understanding and concern for the eyewitness, personalizing the interview, and listening actively.[84])
   b. **Inquire about the eyewitness's condition.** (It helps build rapport and alerts the interviewer to any condition that might impair the eyewitness's memory, such as intoxication, shock, drugs, etc..[85])
   c. **Instruct the eyewitness to (1) volunteer information[86] and (2) report all details he or she remembers about the crime even if the information seems trivial and unimportant.[87] Inform the eyewitness about the type and degree of detail of information the interviewer needs.**[88] (These rules encourage the eyewitness to be active during the interview, which is important because it is the eyewitness who has information about the crime, not the interviewer, and volunteered information is more accurate than information given in answers to questions.[89] These rules also encourage the eyewitness to disclose all the information he or she knows about the crime and helps the eyewitness understand the kind of information and the degree of detail the interviewer needs.[90])
   d. **Ask the eyewitness to mentally recreate the crime.** (The eyewitness can recreate the crime by thinking about his or her thoughts and feelings during the crime—recreating the crime increases recall.[91])

76. *See* Wise et al., *supra* note 2, at 474-484 (for a more detailed explanation of the guidelines for interviews and more extensive and detailed footnotes).
77. TRAINER'S MANUAL, *supra* note 44, at 13; Wise et al. *supra* note 2, at 475.
78. *Id.*
79. *Id.*
80. TRAINER'S MANUAL, *supra* note 44, at 13; Fisher, *supra* note 34, at 756; Wise et al., *supra* note 2, at 476.
81. *Id.*
82. Wise et al., *supra* note 2, at 476.
83. TRAINER'S MANUAL, *supra* note 44, at 14; Wise et al., *supra* note 2, at 477.
84. *Id.*
85. *Id.*
86. TRAINER'S MANUAL, *supra* note 44, at 19; Wise et al., *supra* note 2, at 477.
87. TRAINER'S MANUAL, *supra* note 44, at 20; Wise et al., *supra* note 2, at 477.
88. Fisher, *supra* note 34, at 747; Wise et al. *supra* note 2, at 477.
89. TRAINER'S MANUAL, *supra* note 44, at 16, 19; Wise et al., *supra* note 2, at 477.
90. TRAINER'S MANUAL, *supra* note 44, at 19; Wise et al., *supra* note 2, at 477.
91. TRAINER'S MANUAL, *supra* note 44, at 20; Wise et al., *supra* note 2, at 477-478.

e. **Use primarily open-ended questions during the interview (e.g., "What did the perpetrator look like?").**[92] (Open-ended questions give the eyewitness control of the interview, promote the full disclosure of the details of a crime, produce more accurate information, and improve listening.[93])

f. **Ask closed-ended questions (e.g., "What color was the perpetrator's hair?") only when they are needed to augment open-ended questions.** (Open-ended questions are superior to closed-ended questions, because they do not limit the amount and scope of the information provided by the eyewitness.[94] Nonetheless, close-ended questions should be used to obtain information omitted from answers to open-ended questions.[95])

g. **Avoid interrupting the eyewitness.** (Interruptions interfere with recall and discourage the eyewitness from volunteering information.[96])

h. **Allow for pauses when an eyewitness stops talking before asking the next question.** (Pauses ensure the eyewitness has completed his or her answer.[97])

i. **Tailor questions to the eyewitness's narrative rather than asking a standard set of questions.** (Because each eyewitness's memory of a crime is unique, the interviewer's questions should track what the eyewitness is talking about.[98] For example, if the eyewitness is describing the crime scene, the interviewer should not be asking questions about the perpetrator's appearance.[99])

j. **Encourage nonverbal communications from the eyewitness, such as drawings and gestures, especially from children or eyewitnesses who are not fluent in English.**[100] (Some information about a crime is difficult to express verbally, and some eyewitnesses have limited verbal skills.)

k. **Ask the eyewitness, "Is there anything else I should have asked you?"**[101] (This question helps ensure that the eyewitness has disclosed all important information about the crime.)

3. **Concluding the interview:**

a. **The eyewitness should be encouraged to contact the interviewer if he or she remembers additional facts about the crime.** (Eyewitnesses frequently remember other information about the crime after the interview is completed.[102])

b. **The interviewer should review written documentation with the eyewitness and ask the eyewitness if he or she wishes to change, add, or emphasize anything.** (The review ensures the information was recorded accurately and gives the eyewitness an additional opportunity to recall more information.[103])

c. **Thank the eyewitness for his or her time and cooperation.** (This strengthens rapport with the eyewitness and encourages future cooperation.[104])

B. "CONTAMINATION" OF THE EYEWITNESS'S MEMORY (TABLE 1, STEP I B. 2): TO AVOID CONTAMINATING THE EYEWITNESS'S MEMORY AND TO ASSESS WHETHER THE EYEWITNESS'S MEMORY HAS BEEN CONTAMINATED, THE INTERVIEWER SHOULD:

1. **Separate the eyewitnesses and tell them not to discuss the details of the crime with other eyewitnesses**[105] **and to avoid media accounts of the crime.**[106] (This helps prevent post-event information from contaminating the eyewitness's memory.[107])
2. **Determine if an eyewitness has spoken to another eyewitness or anyone else about the crime or been exposed to media accounts of the crime.** (These sources may have altered the eyewitness's memory of the crime.[108])
3. **Ascertain the nature of the eyewitness's prior law enforcement contact related to the crime being investigated. This includes any prior interviews by law enforcement or participation in any type of identification procedure.** (This information allows the interviewer to assess if post-event information or a biased identification procedure has contaminated the eyewitness's memory.[109])
4. **Avoid volunteering any information about the perpetrator or the crime.** (Volunteered information can alter the eyewitness's memory.[110])
5. **Tell the eyewitness not to guess and to indicate if he or she feels any uncertainty about an answer.** (Guessing can contaminate the eyewitness's memory.[111])

92. TRAINER'S MANUAL, *supra* note 44, at 11; Wise et al., *supra* note 2, at 478.
93. *Id.*
94. *Id.*
95. *Id.*
96. TRAINER'S MANUAL, *supra* note 44, at 16; Wise et al., *supra* note 2, at 479.
97. TRAINER'S MANUAL, *supra* note 44, at 17; Wise et al., *supra* note 2, at 479.
98. *Id.*
99. *Id.*
100. TRAINER'S MANUAL, *supra* note 44, at 20; Wise et al., *supra* note 2, at 479.
101. TRAINER'S MANUAL, *supra* note 44, at 19; Wise et al., *supra* note 2, at 479.
102. TRAINER'S MANUAL, *supra* note 44, at 20; Wise et al., *supra* note 2, at 479-480.
103. TRAINER'S MANUAL, *supra* note 44, at 21; Wise et al., *supra* note 2, at 480.
104. *Id.*
105. TRAINER'S MANUAL, *supra* note 44, at 12; Wise et al., *supra* note 2, at 480.
106. *Id.*
107. *Id.*
108. TRAINER'S MANUAL, *supra* note 44, at 12; Wise et al., *supra* note 2, at 480-481.
109. TRAINER'S MANUAL, *supra* note 44, at 14; Wise et al., *supra* note 2, at 481.
110. TRAINER'S MANUAL, *supra* note 44, at 23; Wise et al., *supra* note 2, at 481.
111. TRAINER'S MANUAL, *supra* note 44, at 20; Wise et al., *supra* note 2, at 481.

6. **Refrain from: (a) using suggestive or leading questions (e.g., "Was the car red?");**[112] **(b) disclosing information to the eyewitness about the crime the interviewer learned from other sources; or (c) using multiple-choice questions.** (They provide post-event information about the crime, which can alter an eyewitness's memory of the crime and his or her ability to identify the perpetrator of the crime.[113])

C. EYEWITNESS CONFIDENCE (TABLE 1, STEP 1 C.): TO PREVENT INCREASING THE EYEWITNESS'S CONFIDENCE AND TO DETERMINE IF IT HAS BEEN ARTIFICIALLY INCREASED, THE INTERVIEWER SHOULD:

1. **Avoid disclosing to the eyewitness: (a) that another eyewitness has identified the same suspect; (b) what another eyewitness said about the crime or the perpetrator; or (c) that other evidence confirms the eyewitness's testimony or identification.** (All these factors increase eyewitness confidence.[114])
2. **Determine whether the eyewitness had contact with other eyewitnesses, the media, or other law enforcement officers, and evaluate the nature of that contact to assess whether it has increased the eyewitness's confidence (e.g., the eyewitness has been told that another eyewitness also identified the suspect).**[115]
3. **Avoid giving the eyewitness any type of confirming feedback (e.g., "Good, you have identified the suspect.") or exposing the eyewitness to unnecessary, repeated questioning.** (These factors can significantly increase eyewitness confidence.[116])
4. **Take a statement of the eyewitness's confidence in the accuracy of his or her identification of the suspect as the perpetrator of the crime immediately after the identification procedure and prior to the eyewitness receiving any feedback about his or her identification.**[117] (Eyewitness confidence can easily be increased. Therefore, it is essential to take a statement of the eyewitness's confidence immediately after the identification and prior to any feedback.[118])

GUIDELINES FOR ANALYZING THE ACCURACY OF IDENTIFICATION PROCEDURES (TABLE 1, STEP 2):

The following 11 scientific guidelines can be used to objectively evaluate whether a lineup or photo array was fair and unbiased.[119] For scientific guidelines for mug books, composite images, and show-ups, see the Guide and Trainer's Manual.[120]

1. **Whenever possible, law enforcement should use a photo array or lineup only when there is probable cause to believe the suspect committed the crime.**[121]
   Erroneous eyewitness identifications occur when the suspect in the photo array or lineup is not the perpetrator. By generally requiring probable cause before placing a suspect in a line, the number of perpetrator-absent lineups will be significantly reduced.
2. **Before conducting an identification procedure, determine whether the eyewitness has previously seen the suspect.**[122]
   When an eyewitness has previously seen the suspect, such as in a mug book, there is significantly greater probability that the eyewitness will identify the suspect in a photo array or lineup even when the suspect is not the perpetrator.
3. **Only one suspect should be included in every identification procedure.**[123]
   Including more than one suspect in an identification procedure significantly increases the probability of an erroneous eyewitness identification because it reduces the number of fillers and increases the probability that a suspect will be selected.
4. **The number of lineup participants should be increased.**[124]
   The typical photo array or lineup contains only five or six participants. Studies show that even if such identification procedures are fair and unbiased they still pose a substantial risk of an erroneous identification.[125] Increasing the number of participants in photo arrays and lineups to twelve reduces erroneous identifications by 50% without a significant decrease in accurate identifications.[126]
5. **The suspect should not stand out from the foils.**[127]
   To prevent this from occurring, several procedures are necessary. First, the foils should generally match the eyewitness's description of the perpetrator of the crime.[128] Second,

112. TRAINER'S MANUAL, *supra* note 44, at 11; Wise et al., *supra* note 2, at 481.
113. TRAINER'S MANUAL, *supra* note 44, at 19; Wise et al., *supra* note 2, at 481-82.
114. Helen M. Patterson & Richard I. Kemp, *Comparing Methods of Encountering Post-Event Information: The Power of Co-witness Suggestion,* 20 APPLIED COGNITIVE PSYCHOL. 1083, 1098 (2006).
115. TRAINER'S MANUAL, *supra* note 44, at 12; Wise et al., *supra,* note 2, at 482.
116. Andrew I. Taslitz, *Convicting the Guilty, the ABA Takes a Stand*, 19 CRIM. JUST. 18, 23 (2005); Wise et al., *supra* note 2, at 482-83.
117. Wells et al., *supra* note 4, at 635; Wise et al., *supra* note 2, at 483.
118. Michael R. Leippe & Donna Eisenstadt, *Eyewitness Confidence and the Confidence-Accuracy Relationship in Memory for People*, *in* 2 HANDBOOK OF EYEWITNESS PSYCHOLOGY, MEMORY FOR PEOPLE 377, 417 (Rod C. L. Lindsay et al. eds., 2007); Wells et al., *supra* note 28, at 586.
119. *See* Wise et al., *supra* note 2, at 484-497 (for a more detailed explanation of these guidelines and more extensive and detailed references).
120. TRAINER'S MANUAL, *supra* note 44, at 25-27, 30-32.
121. Wise et al., *supra* note 32, at 856; Wise et al., *supra* note 2, at 485.
122. Wise et al., *supra* note 32, at 857; Wise et al., *supra* note 2, at 488.
123. TRAINER'S MANUAL, *supra* note 44, at 35; Wise et al., *supra* note 2, at 488.
124. Taslitz, *supra* note 116, at 21; Wise et al., *supra* note 2, at 489.
125. Wells et al., *supra* note 4, at 62; Wise et al., *supra* note 2, at 489.
126. *Id.* at 63; *Id.* at 489.
127. Wise et al., *supra* note 32, at 152; Wise et al., *supra* note 2, at 489-90.
128. TRAINER'S MANUAL, *supra* note 44, at 36; Wise et al., *supra* note 2, at 490.

the suspect's position in the lineup should be randomly determined to prevent a suspect's position in an identification procedure from becoming common knowledge.[129] Third, fillers should not be reused with the same eyewitness, because when this occurs the suspect stands out because he or she is the only person who did not appear in a previous identification procedure.[130] Finally, how the lineup is conducted should not draw attention to the suspect.[131]

6. **Law enforcement should use sequential identification procedures.**[132]
   Sequential lineups[133] reduced the number of erroneous eyewitness identification compared with simultaneous lineups.[134]
7. **The lineup administrator should not know the identity of the suspect.**[135]
   If a lineup administrator knows the suspect's identity, he or she can intentionally or unintentionally cause the eyewitness to choose the suspect.[136] The eyewitness is generally unaware of the administrator's influence on his or her identification.[137]
8. **Eyewitnesses should be given cautionary instructions.**[138]
   The lineup administrator should give the following cautionary instructions: (a) it is as important to clear innocent suspects as it is to identify guilt suspects;[139] (b) the perpetrator's appearance may have changed since the crime;[140] (c) the person who committed the crime may not be in the photo array or lineup;[141] (d) the lineup administrator does not know the identity of the suspect;[142] and (e) the investigation will continue regardless of whether the eyewitness makes an identification.[143]
9. **All identifications should be video recorded.**[144]
   Videotaping ensures that judges, jurors, and attorneys have a complete and accurate record of how the identifications procedures were conducted.[145]
10. **An eyewitness should make a clear statement of his or her confidence at the time of the identification and prior to receiving any feedback.**[146]
    As we have seen, confidence is malleable, and it is the most important factor that the trier of fact relies on in evaluating eyewitness accuracy. Consequently, a statement of confidence should be taken immediately after an identification procedure.
11. **Once a mistake is made in an identification procedure it cannot be corrected.**[147]
    Because of the nature of memory, the effects of a biased identification procedure usually cannot be corrected by later conducting a fair identification procedure.

COMMON EYEWITNESS FACTORS DURING THE CRIME THAT AFFECT EYEWITNESS ACCURACY (TABLE 1, STEP 3):

The following eyewitness factors are commonly present during crimes and affect eyewitness accuracy. This list is not comprehensive. Accordingly, it will be necessary for judges in some criminal cases to consult the eyewitness literature or to consult an eyewitness expert to determine how eyewitness factors during the crime likely affected eyewitness accuracy. The eyewitness factors are divided into three categories: Eyewitness characteristics, perpetrator characteristics, and crime characteristics.[148]

A. EYEWITNESS CHARACTERISTICS

1. *Child Eyewitnesses*

Children provide reasonably accurate answers to open-ended questions, but they are much more susceptible to suggestion and social influences than adults.[149] Therefore, it is crucial to not use suggestive questions, provide post-event information, or in any other way influence the child's answers.[150] Children are about as accurate as adults at making identifications when the perpetrator is in the identification procedure but make more erroneous eyewitness identifications in perpetrator-absent lineups.[151]

129. *Id.*
130. *Id.*
131. CONSTANZO, *supra* note 23, at 185; Wise et al., *supra* note 2, at 491.
132. Wise et al., *supra* note 2, at 491-492.
133. In a sequential lineup, the participants are presented one at a time, they are shown only one time, and the eyewitness must determine if the current participant is the perpetrator prior to seeing the next participant. In a simultaneous lineup all the participants are shown to the eyewitness at the same time. *Id.* at 491.
134. TRAINER'S MANUAL, *supra* note 44, at 44; Wise et al., *supra* note 2 at 491-492.
135. Wise et al., *supra* note 2, at 493.
136. Wells et al., *supra* note 4, at 63; Wise et al., *supra* note 2, a 493.
137. Ryann M. Haw & Ronald P. Fisher, *Effects of Administrator-Witness Contact on Eyewitness Identification Accuracy*, 89 J. APPLIED PSYCHOL. 1106 (2004); Wise et al., *supra* note 2, at 493.
138. Wise et al., *supra* note 2, at 494.
139. TRAINER'S MANUAL, *supra* note 44, at 40; Wise et al., *supra* note 2, at 494.
140. *Id.*
141. *Id.*
142. Wells et al., *supra* note 4, at 630; Wise et al., *supra* note 2, at 494-95.
143. TRAINER'S MANUAL, *supra* note 44, at 39; Wise et al., *supra* note 2, at 495.
144. Saul M. Kassin, *Eyewitness Identification Procedures: The Fifth Rule*, 22 LAW & HUM. BEHAV. 649, 649 (1998); Taslitz, *supra* note 116, at 22; Wise et al., *supra* note 2, at 495.
145. Kassin, *supra* note 144, at 650; Wise et al., *supra* note 2, at 495-96.
146. Wise et al., *supra* note 2, at 496.
147. Wise et al., *supra* note 2, at 497.
148. *See* Wise et al., *supra* note 2, at 497-506 (for more detailed explanation of how these eyewitness factors affect accuracy, and for more extensive and detailed references).
149. *Id.* at 498.
150. COSTANZO, *supra* note 23, at 183; Wise et al., *supra* note 2, at 498.
151. *Id;* Wise et al., *supra* note 2, at 499.

2. *Elderly Eyewitnesses*

Elderly eyewitnesses perform nearly as well as young adults in identifying a perpetrator from a lineup.[152] In perpetrator-absent lineups, however, they make more mistaken identifications than young adults.[153] Elderly adults appear to recall fewer details about a crime than younger adults.[154]

3. *Law Enforcement Officers*

Law enforcement officers are better than laypersons at recalling the details of a crime, but contrary to what most people expect, they are no better than lay persons at identifying the perpetrator of a crime.[155]

4. *Alcoholic Intoxication*

Intoxicated eyewitnesses remember less about the crime and the perpetrator than sober eyewitnesses, though the information they recall tends to be almost as accurate as sober eyewitnesses.[156] Because they recall less about a crime, they are more likely to make an erroneous identification in a perpetrator-absent lineup than a sober eyewitness.[157]

5. *Minor Details*

An eyewitness who attends to minor or peripheral details during a crime has less attention available to encode the perpetrator's face.[158] Consequently, an eyewitness's ability to recall such details about a crime is inversely related to eyewitness accuracy.[159]

6. *Unconscious Transference*

An eyewitness sometimes identifies as the perpetrator a bystander to the crime or an individual they saw in a different context or situation.[160] This error occurs because the eyewitness makes a source-monitoring error. For example, the eyewitness believes the suspect is familiar because he or she is the perpetrator when in fact his or her familiarity results from the eyewitness having previously seen a mug shot of the suspect.[161]

B. PERPETRATOR CHARACTERISTICS

1. *Cross-Race Bias*

Eyewitnesses make less accurate identifications of perpetrators of crimes when the perpetrators are of another race than when they are the same race as the eyewitness.[162]

2. *Disguises*

Even a simple disguise such as a hat makes it much more difficult for an eyewitness to accurately identify the perpetrator.[163] A hat impairs accuracy because it conceals the perpetrator's hair and facial shape, which are important cues to recognizing a person.[164]

3. *Face Distinctiveness*

Highly attractive or unattractive faces are easier to identify than non-distinctive faces.[165]

4. *Weapon Focus*

A weapon impairs identification accuracy[166] because the eyewitness tends to focus on the weapon, which detracts the eyewitness's attention from the perpetrator's face.[167]

C. CRIME CHARACTERISTICS

1. *Exposure Time*

The time an eyewitness has to observe a crime affects how much the eyewitness remembers about a crime.[168] The type or amount of attention paid to the crime, however, is generally more important than how much time an eyewitness had to view the crime.[169]

152. James C. Bartlett & Amina Memon, *Eyewitness Memory in Young and Older Adults*, *in* 2 HANDBOOK OF EYEWITNESS PSYCHOL.: MEMORY FOR PEOPLE 309, 333 (Rod C. L. Lindsay et al. eds., 2007).
153. Kassin *supra* note 144, at 408, 412; Wise et al., *supra* note 2, at 499.
154. BARTOL & BARTOL, *supra* note 12, at 250-51; Wise et al., *supra* note 2, at 499.
155. Brigham et al., *supra* note 9, at 16; Wise et al., *supra* note 2, at 499-500.
156. John C. Yuille & Patricia A. Tollestrup, *Some Effects of Alcohol on Eyewitness Testimony*, 75 J. APPLIED PSYCHOL. 268, 271 (1990); Wise et al., *supra* note 2, at 500-01.
157. Jennifer E. Dysart et al., *The Intoxicated Witness: Effects of Alcohol on Identification Accuracy from Showups*, 87 J. APPLIED PSYCHOL. 170, 170 (2002); Wise et al., *supra* note 2, at 501.
158. Gary Wells & Michael R. Leippe, *How Do Triers of Fact Infer the Accuracy of Eyewitness Identifications? Using Memory for Peripheral Detail Can Be Misleading*, 66 J. APPLIED PSYCHOL. 682, 682 (1981); Wise et al., *supra* note 2, at 502.
159. *Id.*
160. COSTANZO, *supra* note 23, at 178; Wise et al., *supra* note 2, at 502.
161. Evan Brown et al., *Memory for Faces and the Circumstances of Encounter*, 62 J. APPLIED PSYCHOL. 311, 311-18 (1977); Wise et al., *supra* note 2, at 502.
162. Christian A. Meissner & John C. Brigham, *Thirty Years of Investigating the Own-Race Bias in Memory for Faces: A Metanalytic Review*, 7 PSYCHOL. PUB. POL'Y & L. 3-35 (2001); Wise et al., *supra* note 2, at 502.
163. K. E. Patterson & A. D. Baddeley, *When Face Recognition Fails*, 3 J. EXPERIMENTAL PSYCHOL.: HUM. LEARNING & MEMORY 406, 416; Wise et al., *supra* note 2, at 503.
164. Brian L. Cutler et al., *Improving the Reliability of Eyewitness Identification: Putting Context into Context*, 72 J. APPLIED PSYCHOL., 629-37 (1987); Wise et al., *supra* note 2, at 503.
165. Gary L. Wells & Elizabeth A. Olson, *Eyewitness Testimony*, 54 ANN. REV. OF PSYCHOL. 277, 281 (2003); Wise et al., *supra* note 2, at 503.
166. *See* Elizabeth Loftus et al., *Some Facts about "Weapon Focus,"* 11 LAW & HUM. BEHAV. 55, 55 (1987).
167. COSTANZO, *supra* note 23, at 178; Wise et al., *supra* note 2, 503-04.
168. Deanna D. Caputo & David Dunning, *Distinguishing Accurate Eyewitness Identification from Erroneous Ones: Post-Dictive Indicators of Eyewitness Accuracy, in* 2 HANDBOOK OF EYEWITNESS PSYCHOLOGY: MEMORY FOR PEOPLE 427, 428-29 (Rod C. L. Lindsay et al. eds., 2007).
169. Caputo & Dunning, *supra* note 168, at 429; Wise et al., *supra* note 2, at 504.

2. *Forgetting Curve and Retention Interval*

Memory loss is most rapid immediately after the crime.[170] Consequently, eyewitness interviews and identification procedures should be conducted as soon as possible.

3. *Lighting*

Poor lighting impairs an eyewitness's ability to make an accurate identification.[171]

4. *Stress*

Different levels of stress have diverse effects on memory. Mild stress may improve it. As stress increases, tunnel memory may occur,[172] which causes information central to the crime to be vividly remembered while peripheral information is poorly recalled.[173] Very high levels of stress can cause a major deterioration in memory because they activate the eyewitness's fight-or-flight mechanism, which causes the eyewitness to focus on his or her survival rather than the crime.[174]

HOW JUDGES CAN USE THE METHOD

Besides using this Method to assess eyewitness accuracy, judges can use it for a variety of other purposes. For example, judges can use it when ruling on a motion to suppress an eyewitness's identification. The Method can help assess if there was a substantial bias (i.e., suggestiveness) in either the eyewitness interviews or identification procedures that likely affected identification accuracy. Accordingly, if the Method indicates substantial bias occurred and affected identification accuracy, the motion to suppress should be granted unless the eyewitness conditions were exceptionally good; reliable, valid evidence corroborated the eyewitness identification; or exigent circumstances justified the use of a biased identification procedure.

Furthermore, once a biased identification has been conducted, the bias cannot be corrected by later conducting a fair identification procedure. Accordingly, if a biased identification procedure was conducted, any subsequent identification of the defendant, including in-court identification, should also be inadmissible. In sum, judges can use the Method to systematically and comprehensively determine what eyewitness factors likely affected the accuracy of the eyewitness's identification and thus make a more informed decision about whether to grant a motion to suppress.

Judges can also use the Method to decide whether to admit eyewitness-expert testimony in a criminal case. If the Method indicates there was significant bias in how the eyewitness interview or identification procedures were conducted or if the eyewitness conditions were poor, a judge should admit eyewitness-expert testimony, especially if the eyewitness testimony is the sole or primary evidence of the defendant's guilt. Thus the Method, by identifying the relevant eyewitness factors in a criminal case and how they likely affect eyewitness accuracy, can help judges determine whether to admit eyewitness-expert testimony in criminal cases.

The Method can also facilitate the drafting of better eyewitness jury instructions by ensuring they include all the relevant eyewitness factors a jury needs to assess eyewitness accuracy in a case. Moreover, by incorporating the Method itself into jury instructions, judges may not only improve jurors' assessments of eyewitness accuracy, but they may also reduce the need for eyewitness expert testimony in criminal cases. In addition, the Method, when used with expert testimony, may increase its efficacy.

CONCLUSIONS

Eyewitness researchers are constantly discovering new causes and remedies for eyewitness error. Consequently, the guidelines in the Method will undoubtedly have to be updated in the future to reflect new discoveries about eyewitness testimony. We are currently empirically testing the Method, which may lead to refinements and improvements in its procedures. Nonetheless, we believe the Method in its current form provides judges with a powerful tool for deciding eyewitness issues in criminal cases.

The Method indicates there needs to be a paradigm shift in how the criminal justice system views and handles eyewitness testimony. For example, as previously stated, eyewitness evidence needs to be considered a type of trace evidence. Accordingly, unless exigent circumstances existed or an exception applies, eyewitness testimony should be presumed inaccurate if there was significant bias in how the eyewitness interviews or identification procedures were conducted and it likely affected both the eyewitness's memory of the crime and the identification. This presumption is necessary because only by conducting fair and unbiased eyewitness interviews and identification procedures can the criminal justice system significantly reduce eyewitness error.

Furthermore, though there can be some disagreement about exactly what procedures are necessary, judges should consider the NIJ's Guide and Training Manual as establishing the minimum procedures necessary for fair and unbiased interviews and identification procedures. A blue-ribbon panel of 34 law enforcement officers, prosecutors, eyewitness researchers, and defense attorneys wrote the Guide and Trainer's Manual. Moreover, only when there was a consensus that a procedure was necessary for fair and unbiased interviews or identification procedures was it incorporated into the Guide and Trainer's Manual.

Criminal cases where eyewitness testimony is the sole or primary evidence of the defendant's guilt pose the greatest danger that erroneous eyewitness testimony will result in a wrongful conviction. Accordingly, the State should minimize the number of cases it brings where eyewitness evidence is the sole or primary evidence of the defendant's guilt. Moreover, when the State brings such a case, judges need to be especially care-

170. *Id.* at 432; *Id.* at 505.

171. Wells & Olson, *supra* note 165, at 282; Wise et al., *supra* note 2, at 505.

172. Martin A. Safer et al., *Tunnel Memory for Traumatic Events*, 12 APPLIED COGNITIVE PSYCHOL. 99, 99-100 (1998); Caputo & Dunning, *supra* note 168.

173. *Id.*

174. Kenneth A. Deffenbacher et al., *A Meta-Analytic Review of the Effects of High Stress on Eyewitness Memory*, 28 LAW & HUM. BEHAV. 687, 687 (2004); Wise et al., *supra* note 2, 505-06.

ful that the eyewitness interviews and identification procedures in the case were fair and unbiased and that the eyewitness conditions during the crime were good. Finally, judges need to be more cognizant of instances where an eyewitness has identified a foil or did not identify the defendant as the perpetrator of the crime. These misidentifications and non-identifications often provide valuable evidence that should be considered when evaluating the defendant's guilt.

The greatest miscarriage of justice that any legal system can make is to convict an innocent person of a crime. Wrongful convictions also undermine the public's faith in the criminal justice system, especially when the system fails to institute safeguards that could significantly reduce wrongful convictions. By using the Method for analyzing the accuracy of eyewitness testimony discussed in this article, judges can significantly reduce the number of wrongful convictions from eyewitness error.

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APPENDIX: FORM FOR EVALUATING THE ACCURACY OF EYEWITNESS TESTIMONY

I. EYEWITNESS INTERVIEW (EVALUATE SEPARATELY EACH INTERVIEW OF AN EYEWITNESS.)

A. Factors That Indicate the Interview Was Complete, Fair, and Did Not Increase Eyewitness Confidence:

1. List Factors that Indicate the Interview Obtained the Maximum Amount of Information from the Eyewitness:
2. List Factors that Indicate the Interview Was Fair and Did Not Contaminate the Eyewitness's Memory of the Crime:
3. List Factors that Indicate the Interview Did Not Increase the Eyewitness's Confidence:

B. Factors that Indicated the Interview Was Incomplete, Biased, and Increased the Eyewitness's Confidence:

1. List Factors that Indicate the Interview Did Not Obtain the Maximum Amount of Information from the Eyewitness:
2. List Factors that Indicate the Interview Was Biased and Contaminated the Eyewitness's Memory of the Crime:
3. List Factors that Indicate the Interview Increased the Eyewitness's Confidence:

II. IDENTIFICATION PROCEDURES (CONDUCT A SEPARATE ANALYSIS FOR EACH IDENTIFICATION PROCEDURE)

A. List Factors that Indicate the Identification Procedure Was Fair and Impartial:

B. List Factors that Indicate the Identification Procedure Was Biased :

If the interviews and identification procedures were substantially fair and unbiased or an exception applies (e.g., the eyewitness knew the perpetrator prior to the crime or had prolonged, repeated exposure to the perpetrator or there is reliable, valid corroborating evidence of the accuracy of the eyewitness testimony) go on to Part III. If an interview or identification procedures were significantly unfair and biased and no exception applies, the eyewitness testimony or any subsequent identification of the defendant by the eyewitness has no probative value and should not be considered in the determination of the defendant's guilt.

III. EYEWITNESS FACTORS DURING THE CRIME THAT LIKELY AFFECTED IDENTIFICATION ACCURACY

A. List Eyewitness Factors During the Crime that Likely Increased Eyewitness Accuracy:

B. List Eyewitness Factors During the Crime that Likely Decreased Eyewitness Accuracy:

IV. CONCLUSIONS

A. Was the maximum amount of information obtained from the eyewitness during the interviews?
1. yes 2. no

B. Was a statement of the eyewitness's confidence in the accuracy of the identification obtained prior to any feedback?
1. yes 2. no

C. Is there a high, medium, or low probability that the eyewitness testimony was accurate?
1. high 2. medium 3. low

D. Is there a high, medium, or low probability that the eyewitness identification was accurate?
1. high 2. medium 3. low

Memory Conformity Between Eyewitnesses

Fiona Gabbert, Daniel B. Wright, Amina Memon, Elin M. Skagerberg, & Kat Jamieson

More than a century of psychology research has shown that memory is fallible. People's memory can be influenced by information encountered after an incident has been witnessed—so-called postevent information, or PEI.[1] In everyday life, one of the most common ways to encounter PEI is when individuals who have shared the same experience discuss this with one another. In the case of witnessing a crime, individuals might be particularly motivated to discuss what happened, and who was involved, because of the significance of the event. The PEI encountered during this discussion with a co-witness might be largely consistent with one's own memories of the event. However, some details may differ either because one witness has remembered something differently, has paid attention to different details, or has simply made an honest mistake in his or her own account. A common finding within eyewitness-memory literature is that exposure to PEI that is inconsistent with a person's own memory can affect the ability to subsequently report details of the originally encoded event.[2]

The following two examples show how the memory report of one witness may influence that of another witness during a discussion. Witness evidence in the Oklahoma bombing incident of 1995 came from employees working at Elliot's Body Shop where the perpetrator, Timothy McVeigh, rented the truck used in the bombing. McVeigh was arrested for the mass murder but there was a question as to who, if anyone, was his accomplice when he rented the truck. One of the three employees working in the shop that day claimed, with some confidence, that McVeigh was accompanied by a second man. Initially, the other witnesses gave no description of this alleged accomplice. However, later they too claimed to remember details of a second person. This led to a costly police hunt for a person the FBI now believes does not exist. Several months later, the witness who had confidently indicated the presence of an accomplice acknowledged that he may have been recalling another customer. So, why did all three witnesses provide a description of an accomplice when McVeigh had actually entered the shop alone? It is likely that the confident witness unintentionally influenced the others, leading them to report that they also recalled a second man.[3] Indeed, the witnesses admitted in testimony that they had discussed their memories before being questioned by investigators.[4]

The more recent high-profile murder investigation of the Swedish foreign minister, Anna Lindh, in September 2003, provides a second example. Witnesses were all placed together in a small room to prevent them leaving the scene of the crime before being interviewed. The witnesses later admitted to discussing the event with one another while in the room.[5] During these discussions, one witness mentioned to the others present that the perpetrator wore a camouflage-patterned military jacket. As a result, a number of these witnesses subsequently reported this clothing detail to the investigating officers. This description was used in an immediate search for the perpetrator in the surrounding area, and also featured in the release of a national police alert. This detail, however, was incorrect, resulting in wasted police time and resources. Footage from surveillance cameras showed that the killer, Mijailo Mijailovic, was in fact wearing a grey hooded sweatshirt. Given that witnesses were free to discuss the incident with each other at some length, it is reasonable to assume that co-witness influence was the main source of error in the immediate stages of this investigation.[6]

These examples highlight that when witnesses discuss their memories, their accounts of the witnessed event can become similar, and hence, seemingly corroborative. This phenomenon is referred to as "memory conformity."[7] When memory conformity occurs in a formal investigation, whether criminal or civil, there can be serious and costly implications for any subsequent investigations. Of course, not all PEI shared between witnesses will be misleading. There is the potential for witnesses to share accurate PEI, which can have positive effects on memory.[8] Furthermore, collaborative remembering

Footnotes

1. *E.g.,* Fiona Gabbert et al., *Memory Conformity: Can Eyewitnesses Influence Each Other's Memories for an Event?*, 17 APPLIED COGNITIVE PSYCHOL. 533 (2003).
2. *See* Michael. S. Ayers & Lynne. M. Reder, *A Theoretical Review of the Misinformation Effect: Predictions from an Activation-Based Memory Model*, 5 PSYCHONOMIC BULL. & REV. 1-21 (1998); Jacqueline E. Pickrell et al., *The Misinformation Effect*, COGNITIVE ILLUSIONS: A HANDBOOK ON FALLACIES AND BIASES IN THINKING, JUDGMENT AND MEMORY 345 (Rütiger F. Pohl ed., 2004).
3. Amina Memon & Daniel B. Wright, *Eyewitness Testimony and the Oklahoma Bombing*, 12 THE PSYCHOLOGIST 292 (1999); D.L. SCHACTER, THE SEVEN SINS OF MEMORY (HOW THE MIND FORGETS AND REMEMBERS) (2001).
4. Memon & Wright, *supra* note 3.
5. PärAnders Granhag, Karl Ask & Anna Rebelius, *"I Saw the Man Who Killed Anna Lindh," A Case Study of Eyewitness Descriptions*, 15TH EUROPEAN CONFERENCE ON PSYCHOLOGY & LAW, Vilnuis, Lituania (June 2005).
6. *Id.*
7. *E.g.,* Daniel B. Wright et al., *Memory Conformity: Exploring Misinformation Effects When Presented by Another Person*, 91 BRIT. J. PSYCHOL. 189 (2000).
8. *See* Helen M. Paterson & Richard I. Kemp, *Comparing Methods of Encountering Post-Event Information: The Power of Co-Witness Suggestion*, 20 APPLIED COGNITIVE PSYCHOL. 1083 (2006).

can help people remember details that would otherwise have been forgotten. However, the notion that group members can "cross-cue" one another to produce new memories that would not have been generated if remembering alone is not supported by research,[9] even when attempts are made to increase the opportunity for cross-cuing.[10] In contrast, a large amount of research has shown that people are easily influenced by misleading PEI encountered from another person.[11]

Criminal events are often witnessed by more than one person,[12] and discussion between witnesses is common.[13] For example, an Australian survey of students who had witnessed a crime found that where multiple witnesses had been present, 86% of respondents admitted to discussing the event with a co-witness.[14] More recently, a U.K. survey of eyewitnesses who were interviewed after viewing a lineup revealed that the majority had witnessed the crime with other people present, and more than half of these people had discussed the event with a co-witness.[15] Although it is best practice for the police to encourage witnesses to the same event not to discuss their memories for fear of evidence contamination, it is likely that many witnesses do enter into discussions about the event both before the police arrive and afterward, even if police warned them not to do so. In such circumstances investigators and jurors may subsequently attach a false corroborative value to any consistencies between witness statements obtained or any evidence given in court thereafter, when the evidence may be contaminated if the witnesses had discussed their memories before being interviewed by the police.

EXPERIMENTAL RESEARCH ON MEMORY CONFORMITY

There are different approaches to studying memory.[16] As cognitive psychologists our approach is to understand the processes that can lead to an individual reporting an event in a certain way, such as reporting what another person has said when asked to give an independent report. We try to isolate a small number of factors and then vary those factors systematically to see how they affect response. This study is well suited for the legal arena because the interest in this context is the reliability of individual eyewitnesses and the factors that can affect that reliability.

The basic memory-conformity procedure is to show a small group of people (often just a pair) some set of stimuli or an event, have the people interact with each other, and then individually test each person about what he or she remembers. One critical decision memory-conformity researchers have to make is whether to have the PEI delivered from one participant to another, or to have a confederate (a person working for the researcher but pretending to be a participant) deliver the PEI. When participants are presenting PEI to each other, it is common to show them slightly different materials so that disagreements are likely. Consider one study that used this approach:[17] Two versions of a crime event were made, each containing the same sequence of events but filmed from different angles to simulate different witness vantage points. The different viewing angles allowed the participants to see two different critical features of the event. After viewing, participants had an opportunity to remember the event together, where the critical features were often discussed. An individual memory test followed and 71% of witnesses who had discussed the event reported at least one of the two erroneous critical details acquired from their co-witness.

"[A] large amount of research has shown that people are easily influenced by misleading [postevent] information encountered from another person."

Using a confederate has some advantages over other methods because well-trained confederates can impart the same PEI, in the same manner, to all participants during the course of a discussion. For example, Gabbert et al. used a confederate to examine whether participants are more suggestible when post-event misinformation is encountered socially via a face-to-face discussion rather than when it is encountered via non-social means.[18] Participants viewed a simulated crime event and were later exposed to four items of misleading PEI about the event. This came within the context of a discussion with a confederate whom they believed to be a fellow participant, or within a written narrative allegedly written by a previous participant. The confederate was trained to disclose the same items of correct and misleading PEI that were present in the

9. Peter R. Meudell et al., *Are Two Heads Better than One?: Experimental Investigations of the Social Facilitation of Memory*, 6 Applied Cognitive Psychol. 525 (1992).
10. Peter R. Meudell et al., *Collaboration in Recall: Do Pairs of People Cross-Cue Each Other to Produce New Memories?*, 48A Q.J Experimental Psychol. 141 (1995).
11. *See* Gabbert et al, *supra* note 1; Fiona Gabbert et al., *Say It to My Face: Examining the Effects of Socially Encountered Misinformation*, 9 Legal & Criminological Psychol. 215 (2004); Fiona Gabbert et al., *Memory Conformity: Disentangling the Steps toward Influence During a Discussion*, 13 Psychonomic Bull. & Rev. 480 (2006); Matthew B. Reysen, *The Effects of Conformity on Recognition Judgments*, 13 Memory & Cognition 87 (2005); Dana M. Schneider & Michael J. Watkins, *Response Conformity in Recognition Testing*, 3 Psychonomic Bull. & Rev. 481 (1996); Wright et al., *supra* note 7.
12. *See* Tim Valentine et al., *Characteristics of Eyewitness Identification that Predict the Outcome of Real Lineups*, 17 Applied Cognitive Psychol. 969 (2003); Daniel B. Wright & Anne T. McDaid, *Comparing System and Estimator Variables Using Data from Real Line-Ups*, 10 Applied Cognitive Psychol. 75 (1996).
13. *See* Paterson & Kemp, *supra* note 8; Daniel B. Wright et al., *Changing the Criterion for Memory Conformity in Free Recall and Recognition*, 16 Memory 137 (2008).
14. Paterson & Kemp, *supra* note 8.
15. Elin M. Skagerberg & Daniel B. Wright, *The Prevalence of Co-Witnesses and Co-Witness Discussions in Real Eyewitnesses*, 14 Psychol. Crime & L. 513 (2008).
16. *See* Suzanne Nalbantian et al., The Memory Process (2010).
17. Gabbert et al, *supra* note 1.
18. Gabbert et al., *supra* note 11.

"Figure 1 shows a model of memory conformity with two routes for reporting what another person has said rather than reporting what one remembers."

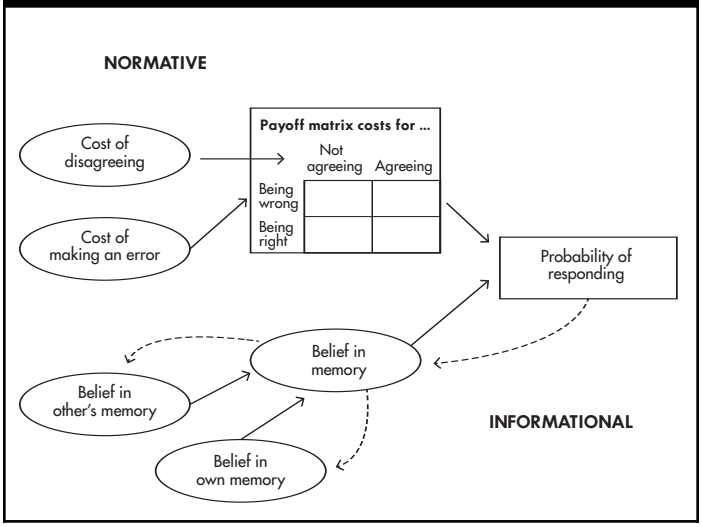
misleading narrative. In a final memory test about the crime event, participants who had encountered the misleading PEI socially were more likely to report this misinformation than those who had encountered the same misinformation while reading the narrative.

Irrespective of the methods utilized, the focus of memory-conformity research is on understanding why people report information that has merely been suggested to them, thus allowing for possible predictions to be made as to when these effects are most likely to occur. Furthermore, this area of research also provides a grounding for predicting whether certain people are particularly likely to conform to another witness's memory rather than relying on their own.

Figure 1 shows a model of memory conformity with two routes for reporting what another person has said rather than reporting what one remembers.[19] The top, normative route involves the person comparing the cost of disagreeing with the cost of making an error. People may agree with another person because of normative pressures to conform even when they believe the response is in error. Normative motivations to conform often reflect an individual's need for social approval and manifest as public declarations of agreement despite private disagreement. Thus, people might outwardly agree with another person's recollected version of events when privately they do not believe that is what actually happened.[20] Normative influence can be shown by people reporting the same thing as somebody else when the other person is present, but reverting to their own belief when questioned privately.[21] Normative influences are strongest when the costs of disagreeing are high. Under these conditions, participants engaging in collaborative retrieval may appear to be in agreement with each other when in fact this behavior reveals little about social influences on memory and more about motivations and behaviors to increase social acceptance and to appear more likeable.[22] For example, Baron, Vandello, and Brunsman conducted an eyewitness-identification study and found that participants knowingly gave an incorrect response so as not to disagree with a confederate when they were told the results were of little importance (that their responses would be used as pilot data) but were less likely to conform when they were told the results were important (that their responses would be used by the police and courts).[23]

FIGURE 1. A MODEL OF MEMORY CONFORMITY.

ADAPTED FROM DANIEL B. WRIGHT ET AL., SOCIAL ANXIETY MODERATES MEMORY CONFORMITY IN ADOLESCENTS, 24 APPLIED COGNITIVE PSYCHOL. 1034 (2010).



The bottom, or informational, route in Figure 1 involves the witness comparing how accurate they think they are with how accurate they think the co-witness is. The person must decide which source of information is more trustworthy. Informational motivations to conform are reflected in a person's decision to accept and later report PEI encountered from a co-witness if it is believed to be correct. This is particularly likely in situations where an individual doubts the accuracy of his or her own memory or when the information encountered from another individual convinces them that his or her initial judgment might be wrong, thus supporting Festinger's[24] assertion that the need to feel certainty or confidence in one's beliefs drives much social influence.[25]

Several research laboratories have investigated how normative and informational influences affect the ways in which people respond to memory probes. Most of the research is done by altering one of the factors shown in the ellipses on the left of Figure 1 (e.g., the cost of making an error). Altering each of these produces systematic effects on how people respond. Below we review some of these studies.

19. Daniel B. Wright et al., *Social Anxiety Moderates Memory Conformity in Adolescents*, 24 APPLIED COGNITIVE PSYCHOL. 1034 (2010).
20. *See* Robert B. Cialdini & Noah J. Goldstein, *Social Influence: Compliance and Conformity*, 55 ANN. REV. PSYCHOL. 591 (2004); Morton Deutsch & Harold G. Gerard, *A Study of Normative and Informational Social Influence upon Individual Judgement*, 59 J. ABNORMAL SOC. PSYCHOL. 204 (1955).
21. *See* Kevin Allan & Fiona Gabbert, *I Still Think It Was a Banana: Memorable "Lies" and Forgettable "Truths,"* 127 ACTA PSYCHOLOGICA 299 (2008); Schneider & Watkins, *supra* note 11; John S. Shaw et al., *Co-Witness Information Can Have Immediate Effects on Eyewitness Memory Reports*, 21 LAW & HUM. BEHAV. 503 (1997).
22. *See* Henri Tajfel & John C. Turner, *The Social Identity Theory of Inter-Group Behaviour*, *in* PSYCHOLOGY OF INTER-GROUP RELATIONS 7 (Stephen Worchel & William G. Austin eds., 2d ed., 1986).
23. Robert S. Baron, Joseph A. Vandello, & Bethany Brunsman, *The Forgotten Variable in Conformity Research: Impact of Task Importance on Social Influence*, 71 J. PERSONALITY & SOC. PSYCHOL. 915 (1996).
24. Leon Festinger, *A Theory of Social Comparison Processes*, 7 HUM. REL. 117 (1954).
25. *See* Curtis D. Hardin & E. Tory Higgins, *Shared Reality: How Social Verification Makes the Subjective Objective*, *in* HANDBOOK OF MOTIVATION AND COGNITION: THE INTERPERSONAL CONTEXT 28 (E. Tory Higgins & Richard M Sorrentino eds.,vol. 3, 1996).

Acquaintance versus Stranger Studies

When a crime occurs there are often multiple witnesses. Sometimes these witnesses are acquaintances, and sometimes they are strangers. An important applied question is whether the relationship between co-witnesses affects how susceptible they are to each other's influence. We expect that there is a larger cost of disagreeing when one knows the other person. It may also be that people think their acquaintances have better memories than strangers. Thus, from Figure 1 we predict that acquaintances should be more susceptible to memory-conformity effects than strangers, and two studies offer support in respect of these predictions. Hope, Ost, Gabbert, Healey, and Lenton found that previously acquainted witnesses, in this case pairs of friends and romantic partners, were more likely to report information obtained from their co-witness than were previously unacquainted strangers.[26] French, Garry, and Mori also found previously acquainted participants (romantic partners) showed an increased susceptibility to memory conformity than strangers.[27]

Thus, the more prepared we are to accept another person's judgments and value his or her opinion, the more we become subject to his or her influence.[28] From an applied perspective the difference between acquaintances and strangers is likely to be even larger because acquaintances are more likely to engage in conversations in the days after viewing a crime. Thus, it is important for the police to get independent testimony from acquaintances as soon as possible after the event. In court it is important that the types of relationships held among different witnesses are considered.

Beliefs in Own and Other Person's Memory

Figure 1 shows that a person's final belief about a memory can be reached by comparing the belief he or she has in his or her own memory with the belief he or she has in another person's memory. How this combination occurs is complex, but the basic findings are that stronger beliefs in one's own memory inoculate a person from memory-conformity effects, and stronger beliefs in another person's memory can increase the influence of that person's memory report. Supporting this, research has found that the overt confidence with which individuals make their assertions to each other can operate systematically as a cue that promotes conformity.[29] This explains why the confident memory of an accomplice in the Oklahoma bombing case quickly spread to the reports given by the co-workers. For example, Wright et al. investigated memory conformity between co-witnesses by showing pairs of participants a storybook containing 21 color pictures depicting a crime taking place.[30] The storybooks were identical, except in one the culprit had an accomplice and in one there was no accomplice. Participants were then asked true/false recognition questions about what they had seen and rated their confidence after each question. Following this they discussed their memories about the sequence of events, including whether there was an accomplice, and then answered the same questions. While the people within each pair initially disagreed about there being an accomplice, after discussing the event most of the pairs were in agreement. The person in the pair who was initially more confident tended to persuade the other person in the pair. More recently Allan and Gabbert systematically manipulated the confidence with which accurate and misleading PEI was delivered to participants.[31] They found further support that a person's confidence in what he or she has to say can alter the immediate persuasiveness of its content, and that people make use of their perceptions of confidence as a cue when determining who is most likely to be correct.[32]

"[W]e predict that acquaintances should be more susceptible to memory-conformity effects than strangers...."

Tendencies to conform can also be affected by manipulating the perceptions of each individual regarding the relative knowledge each has of stimuli they encoded together. Gabbert, Memon, and Wright showed pairs of people a series of complex drawings, which they believed were exactly the same, but in fact had some slight differences.[33] The pair was told that one of them had viewed slides for twice the length of time as the other, though actual encoding duration was the same. Participants who believed they had seen the slides for less time than their partner were more likely to conform to their partner's memory for items than those who thought they had viewed the slides longer. Thus, individuals who believe they have an inferior memory quality to others are more likely to become influenced by, and subsequently report, items of errant PEI encountered from another person.

An important application of this is that the roles witnesses have will often differ, and sometimes these roles will determine how influential a witness is when remembering an event together with co-witnesses. For example, there are differences between a bystander or observer and a witness who interacts with a criminal. Carlucci, Kieckhaefer, Schwartz, Villalba, and Wright showed bystanders can be more susceptible to memory-conformity effects than people who interact with a target person.[34] They had a male confederate approach a group of people on a crowded beach in South Florida and ask one of the people for the time. The confederate walked out of view, and a

26. Lorraine Hope et al., *"With a Little Help from My Friends…": The Role of Co-Witness Relationship in Susceptibility to Misinformation*, 127 Acta Psychologica 476 (2008).
27. Lauren French et al., *The MORI Techniques Produces Memory Conformity in Western Subjects*, 22 Applied Cognitive Psychol. 431 (2007).
28. *See* Leon Festinger, A Theory of Cognitive Dissonance (1957).
29. Allan & Gabbert, *supra* note 21; Schneider & Watkins; *supra* note 11; Wright et al., *supra* note 7.
30. Wright et al., *supra* note 7.
31. Allan & Gabbert, *supra* note 21.
32. *See* Schneider & Watkins, *supra* note 11.
33. Fiona Gabbert et al., *I Saw It for Longer Than You: The Relationship Between Encoding Duration and Memory Conformity*, 124 Acta Psychologica 319 (2007).
34. Marianna Carlucci et al., *The South Beach Study: Bystanders' Memories are More Malleable*, 25 Applied Cognitive Psychol. 562 (2011).

"[B]elieving something is correct... can facilitate the creation of a false memory."

research assistant approached either the person who interacted with the confederate or another person in the group. The research assistant showed the person a six-person target-absent lineup. After that person had made an identification, the research assistant turned to another person and asked that she or he also make an identification. When responding second, the bystander was more than twice as likely to conform than the person who had previously interacted with the confederate. From a theoretical perspective, this suggests that people believe bystanders have worse memories than those directly involved with an interaction. From an applied perspective, it is important for investigators to consider the role of all the witnesses and to take this into account when it is suspected that the witnesses may have discussed the crime.

Source Credibility

Further support for informational influence underlying some of the observed memory-conformity effects comes from research showing that the size of the memory-conformity effect is moderated by person-perception factors, such as perceived source credibility. For example, Kwong See, Hoffman, and Wood showed participants (young adults) a slide show depicting a theft and then presented them with a narrative summarizing the incident.[35] To manipulate source credibility, this narrative was either introduced as being an account of the event as remembered by a 28-year-old or an 82-year-old. In fact, the narratives were the same, each including four items of misleading PEI. Because the young adult participants trusted young people's memories more than the memories of older adults, from Figure 1 we would predict that participants would be more influenced by the young-adult reports. This is what the researchers found. Participants were more likely to coalesce with the younger adult's memories than with those of the older adult. Skagerberg and Wright found similar results.[36] Participants were more influenced if the co-witness was a fellow student or a police officer than if the co-witness was a child. These results have applied significance. Some groups of people will be more influential than others. If a police officer at the scene of a crime confidently states that "a red car passed through the stop sign," this will have a larger impact on co-witnesses than if a young child gave the same statement.

In summary, memory-conformity effects are often driven by informational influences. People conform to another person's version of events when that person is perceived as more knowledgeable, more confident, and/or more credible. Because of this, conformity effects driven by informational influence may persist over a delay,[37] and people may report the suggested information in private as well as public.[38] Even in situations where it is vital to provide an accurate and unbiased opinion, research suggests that individuals who are uncertain are likely to conform to another person's decision or memories.[39]

Source Misattributions

Another explanation for the memory-conformity effect is that people have made a source misattribution where a memory from one source (e.g., a discussion with a co-witness) is mistakenly misattributed to another source (e.g., the witnessed event), and thus reported as if it is a personal memory. In other words, it is possible for people to construct a (false) memory based on what the other person has said. This is not illustrated in Figure 1 because we believe the processes and time-course are different to that of normative or informational routes to memory conformity. However, believing something is correct (the informational route) can facilitate the creation of a false memory.[40]

The source-monitoring framework describes the judgment processes that individuals employ to accurately identify the source of a memory, as well as specifying factors that are likely to promote source-monitoring errors.[41] For example, according to the source-monitoring framework, our memories contain various characteristics that provide clues as to their origin. Memories from different sources tend to differ on average in the quantity and quality of the characteristics associated with them. Individuals use these differences in memory characteristics as heuristics to attribute their memories to a particular source. However, there is no single aspect of our memories that specifies the true source without fail, and, as a consequence, source misattributions can occur.[42]

Research and theory on the accuracy of source monitoring has shown that source-confusion errors increase when there is an overlap in the memory characteristics from two different sources.[43] This finding is particularly relevant, as there is a large amount of contextual overlap between the encoding phase and the misinformation phase within memory-conformity experiments. Both phases of the experiment concern the

35. Sheree T. Kwong See et al., *Perceptions of an Elderly Eyewitness: Is the Older Eyewitness Believable?,* 16 PSYCHOL. & AGING 346 (2001).
36. Elin M. Skagerberg & Daniel B. Wright, *Susceptibility to Post Identification Feedback Is Affected by Source Credibility*, 23 APPLIED COGNITIVE PSYCHOL. 506 (2009).
37. *See* Allan & Gabbert, *supra* note 21; Helen M. Paterson et al., *Co-Witnesses, Confederates, and Conformity: Effects of Discussion and Delay on Eyewitness Memory*, 16, PSYCHIATRY, PSYCHOL. & L. 112 (2009); Reysen, *supra* note 11.
38. *See* Wright et al., *supra* note 13.
39. *See* Baron et al., *supra* note 23; Andrew L. Betz et al., *Shared Realities: Social Influence and Stimulus Memory*, 14 SOC. COGNITION 113 (1996); Wright et al., *supra* note 7.
40. *See* Alan Scoboria et al., *Plausibility and Belief in Autobiographical Memory*, 18 APPLIED COGNITIVE PSYCHOL. 791 (2004).
41. *See* M.K. Johnson et al., *Source Monitoring*, 114 PSYCHOL. BULL. 3 (1993).
42. *Id.*
43. Linda A. Henkel & Nancy Franklin, *Reality Monitoring of Physically Similar and Conceptually Related Objects*, 26 MEMORY & COGNITION 659 (1998); Roslyn Markham & Lisa Hynes, *The Effect of Vividness of Imagery on Reality Monitoring*, 17 J. MENTAL IMAGERY 159 (1993).

witnessed stimuli and thus overlap in terms of content. Furthermore, both phases (usually) take place within a limited time frame and in the same experimental environment. In real life, a similar amount of contextual overlap might be expected. Co-witnesses are likely to talk about what they have just seen (content overlap); they are likely to do this immediately after the crime event (temporal overlap); and it is likely that this discussion occurs at the scene, while waiting for the police to arrive, rather than at a different location (environmental overlap). The consequences of source-monitoring errors can be very serious in a criminal investigation, as they have the potential to lead to inaccurate testimony, biased evidence, and false corroboration between witnesses.

Gabbert et al. examined the extent to which source confusions are accountable for the memory-conformity effect.[44] Over the course of the experiment, participants engaged in a series of discussions with a co-witness about details featured in slides. Each member of the pair had in fact viewed slightly different versions of the slides—a manipulation that introduced the potential for them to share items of misleading PEI. Following each discussion, they were asked to provide an individual account of what had been seen. At the end of the experiment a source-monitoring task was administered where participants were asked to review their free-recall responses and to (a) circle the details that they remembered hearing from their co-witness but not actually seeing themselves; (b) leave unmarked the details that they did remember seeing in the pictures; and (c) underline the details for which they could not remember the source. About half of the errantly reported details were correctly categorized as having been encountered in the co-witness discussions; however, about half were incorrectly attributed to having been seen in the original slide presentation.

Similar findings were reported in a study by Paterson et al.[45] Participants discussed their recollections of a mock crime event with a co-witness who had seen a slightly different version. One week later they were interviewed separately about what they could remember. Following the interview, participants were asked to read through their statements and indicate the source of each item of information reported by attributing it to one of four sources: video only, discussion only, both the video and discussion, or unsure. If participants reported suggested items at test and correctly attributed these to having originated from the co-witness discussion, then the source-monitoring decision was coded as being accurate. However, if suggested items of information that had been reported at test were attributed to (a) the video or (b) the video and discussion, then the source-monitoring decision was coded as being inaccurate. Participants frequently reported that they had seen items of PEI that had in fact only been suggested to them in the co-witness discussion. Accurate source-monitoring judgments were made on only 43% of occasions.

WHAT CAN BE DONE TO PROTECT AGAINST MEMORY CONFORMITY?

"It is known that people forget the source of the information faster than the information itself..."

Paterson et al. examined whether a warning to disregard PEI encountered from a co-witness was effective in reducing memory conformity.[46] Participants viewed a mock crime event that was either the same or slightly different to the event viewed by their partner. Following this, they discussed their memories together. One week later, half of the participants from each condition were given a warning that they may have been exposed to misleading PEI from the co-witness with whom they had discussed the event. Participants were then individually interviewed about what they had seen in the event. Paterson et al. found that 28% of participants who received a warning reported at least one piece of misinformation in comparison to 32% of those who did not receive a warning.[47] Thus, warning participants about misinformation one week after exposure did not appear to substantially reduce the memory-conformity effect.

It is known that people forget the source of the information faster than the information itself, so perhaps the warning in Paterson et al.'s study was given too late for the participants to effectively monitor the source of information relating to a crime event and to disregard items of PEI encountered from the co-witness. To investigate this, the researchers ran a second study to explore whether warning participants about potential exposure to misinformation immediately after the co-witness discussion was more effective than giving the warning after a week. A control group received no warning. Once again, researchers found that warning participants that they may have been exposed to misleading PEI from their co-witness did not significantly reduce their susceptibility to memory conformity.

Bodner, Musch, and Azad had more success with warning participants to disregard PEI from a co-witness.[48] Their warning explicitly asked participants not to report details that they acquired from their secondary source unless they also remembered seeing the details. The warning was given to participants in the same test session as viewing and discussing an event. In contrast to Paterson et al.'s findings,[49] Bodner et al. found that the warning was effective and sharply reduced the rate of reporting non-witnessed details. However, even with such minimal delay between the co-witness discussion and the instruction to disregard non-remembered items of PEI, the warnings did not eliminate the memory-conformity effect. Meade and Roediger have also found that warnings can reduce, but not eliminate, the memory-conformity effect.[50]

In sum, research shows that post-warnings to disregard PEI are not always successful because people often do not remem-

44. Gabbert et al., *supra* note 33.
45. Paterson et al., *supra* note 37.
46. *Id.*
47. *Id.*
48. Glen E. Bodner et al., *Re-Evaluating the Potency of the Memory Conformity Effect*, 37 Memory & Cognition 1069 (2009).
49. Paterson et al., *supra* note 37.
50. Michelle L. Meade & Henry L. Roediger, E*xploration in the Social Contagion of Memory*, 30 Memory & Cognition 995 (2002).

"[Research] has shown that memories are malleable and that individuals are vulnerable to conforming to other people's memory reports."

ber where they heard information. This is particularly true long after the discussion with co-witnesses. Police investigators and others in the criminal justice system should ask witnesses if they spoke with co-witnesses about the crime.[51] The problem with this is that people may have forgotten if they had engaged in discussions with others, and it is very likely they will have poor memories for what was discussed. Warnings to disregard PEI will only work if individuals are able to remember the source of the information that they are able to recall. Thus, the differences found between studies that have and have not found warnings to be effective probably reflect differences in the strength of people's memories caused by encoding quality, the delay between study and test, motivations to remember, etc. Where memory conformity has occurred as a result of a genuine memory distortion, namely, a source confusion, witnesses may be unable to accurately retrieve the source of the information and may claim to remember seeing items of information that have actually been encountered from a co-witness.[52] That some research has found source judgments can be wrong, even with deliberate consideration, highlights the fact that being able to recall memories does not guarantee their authenticity.

Perhaps trying to *prevent* potentially contaminating interactions and recording memories before any interactions is a better approach than using post-event warnings. Police should separate witnesses as much as possible and encourage them not to discuss the crime. An alternative approach is to gather memories from as many witnesses as possible before contamination can occur (and also before memories have had much time to weaken).

A novel way to obtain information from witnesses quickly, and strengthen memory in the process, is to ask witnesses to complete the "Self-Administered Interview" as soon after a witnessed incident as possible.[53] The Self-Administered Interview, or SAI, is a recall tool, currently in booklet form, designed to obtain high-quality information from witnesses quickly and efficiently at the scene of an incident or shortly afterwards. It contains information about what is expected of the witness, instructions to facilitate the use of retrieval techniques, and questions prompting the witness to disclose what happened during the event and who was involved. The SAI is a generic response tool in that it is suitable for obtaining evidence about a wide range of different incidents. It is currently in operational use by some police forces in the U.K.

During development and early testing of the SAI, mock witnesses, comprising a sample of community volunteers, viewed a simulated event and were required to report as much as they could about what they had seen.[54] Witnesses who completed the SAI tool reported 42% more correct details than participants who were simply asked to report what they had seen. In a second study, mock witnesses who completed the SAI recalled approximately 30% more correct details after one week than did witnesses who did not have an early recall opportunity. These results suggest that the SAI facilitates the retrieval and reporting of accurate information, as well as strengthening and protecting memory for a witnessed incident such that forgetting is minimized.

Recent research by Gabbert and colleagues examined the hypothesis that because the SAI seemingly works by strengthening the original episodic memory (the "Belief in own memory" from Figure 1), mock witnesses who complete an SAI shortly after viewing a simulated crime event will be better able to detect and resist items of misleading PEI encountered subsequently.[55] Findings were in line with predicted results.[56] Research by Geiselman, Fisher, Cohen, Holland, and Surtes, as well as Memon, Zaragoza, Clifford, and Kidd have also shown that participants are better able to be vigilant against discrepancies if their memory for a target event is strengthened.[57]

SUMMARY

It is crucial to gain firsthand reports from witnesses during any investigation. However, the research presented here has shown that memories are malleable and that individuals are vulnerable to conforming to other people's memory reports. People frequently report items at test that they have encountered during a discussion with a co-witness rather than perceived themselves. Real-life cases highlight the serious consequences of memory conformity occurring in the context of a forensic investigation. Research therefore continues to use and to refine methods that allow a controlled examination of the effects of naturalistic interactions on subsequent memory reports. Factors that increase, decrease, and possibly eliminate the longer-term effects of memory conformity are investigated.

51. British Psychological Society, Guidelines on Memory and the Law: Recommendations from the Scientific Study of Human Memory (2008).
52. *See* Gabbert et al., *supra* note 33; Paterson et al., *supra* note 37.
53. Fiona Gabbert et al., *Protecting Eyewitness Evidence: Examining the Efficacy of a Self-Administered Interview Tool*, 33 Law & Hum. Behav. 298 (2009).
54. *See* Fiona Gabbert, Lorraine Hope, Ronald P. Fisher & Kat Jamieson, *Protecting Eyewitness Evidence at the Scene of a Crime: Can a Self-Administered Interview Protect Against Susceptibility to Misinformation?*, Int'l Interviewing Res. Group, Teesside, UK (April 2009).
55. *See* Elizabeth F. Loftus et al., *Who Remembers Best: Individual Differences in Memory for Events that Occurred in a Science Museum*, 6 Applied Cognitive Psychol. 93 (1992); James P. Tousignant et al., *Discrepancy Detection and Vulnerability to Misleading Post-Event Information*, 14 Memory & Cognition 329 (1986).
56. Gabbert et al., *supra* note 54; Fiona Gabbert et al., *Protecting against Susceptibility to Misinformation with the Use of a Self-Administered Interview*. Applied Cognitive Psychol. (in press).
57. R. Edward Geiselman et al., *Eyewitness Responses to Leading and Misleading Questions Under the Cognitive Interview*, 14 J. Police Sci. & Admin. 31 (1986); Amina Memon et al., *Inoculation or Antidote?: The Effects of Cognitive Interview Timing on False Memory for Forcibly Fabricated Events,* 34 Law & Hum. Behav. 105 (2010).

This body of research has revealed that memory conformity occurs most often when individuals are not confident enough in their own memory to notice and to reject discrepant PEI, and when individuals believe that someone else's memory for a witnessed event is more reliable than their own. Police should always ask witnesses if they have discussed the incident with another witness and warn against reporting any information that they do not remember themselves. Warnings to disregard PEI from a co-witness are not always effective; however, interviewing witnesses with minimal delay, using a tool such as the SAI if necessary, may facilitate their ability to differentiate between their own memories and someone else's.

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Repeated Information in the Courtroom

Jeffrey L. Foster, Maryanne Garry, & Elizabeth F. Loftus

It is widely understood among scientists and criminal and civil lawyers that eyewitnesses are often inaccurate, and that inaccurate information can contaminate memories of other eyewitnesses.[1] It is less widely known—although no less true—that when misleading claims are repeated, they are more likely to damage other people's memories than when those claims are made only once.[2] But until recently, neither lawyers nor scientists knew the answer to these questions: Does one person repeating an inaccurate claim do more damage to the memories of other eyewitnesses than that same person making the claim only once? And when that inaccurate claim is repeated, does it matter how many people make it? In this paper, we address those questions.

Suppose a robbery occurs for which there were four eyewitnesses. If one eyewitness, let's call him John, mistakenly tells another eyewitness, Ringo, that the robber was wearing a blue hat—when in fact the robber was wearing a black hat—than we know Ringo may, inadvertently, remember later that the robber was wearing a blue hat. But would Ringo be even more likely to make this mistake if John had repeated that inaccurate claim multiple times? By contrast, suppose that all of the eyewitnesses—John, Paul, and George—mistakenly claimed it was a blue hat. Would their converging evidence be more misleading to Ringo than if John had simply repeated it multiple times? Put another way, do inaccurate claims do more damage when made by multiple sources, or is it the repetition of claims that matters?

WHAT ROLE DOES THE NUMBER OF SOURCES TAKE IN THE BELIEVABILITY OF A CLAIM?

On the one hand, it is intuitively appealing that a claim would be more credible or more damaging when there is consensus among eyewitnesses. Indeed, scientific research tells us we put more trust in our own memories when other people who were there remember it the same way,[3] and we have more trust in the details of a crime that multiple eyewitnesses remember than the details of a crime that only one eyewitness does.[4] And not only is this trust intuitively appealing, but research supports its validity: When a suspect is picked out of a lineup by multiple eyewitnesses, their identification is more likely to be accurate than when that suspect is picked by only one eyewitness.[5] In addition, people's susceptibility to misleading information changes in response to characteristics of the person making the claim. For instance, an innocent bystander is more misleading than the perpetrator of the crime.[6] And even more subtle characteristics of a misleading eyewitness can influence people's susceptibility to misinformation. In one study, eyewitnesses with more powerful and socially attractive accents were more misleading than eyewitnesses with less powerful and socially attractive accents.[7] Taken together, these findings suggest that the consensus of multiple eyewitnesses should be more misleading than the repeated claims of a single eyewitness.

On the other hand, we know that repeated information can lead people to make mistakes. Trivia questions that require a true/false response are more likely to be rated as true when they are repeated;[8] when people repeatedly view pictures of a place they have never visited, they become more confident that they have been there before;[9] and when one person states an opinion multiple times, other people are more likely to believe that opinion is held by others as well.[10] Considered together, these findings suggest that the repetition of inaccurate claims should be more important than the consensus of multiple eyewitnesses.

Footnotes

1. This article is adapted from Jeffrey L. Foster et al., *Repetition, Not Number of Sources, Increases Both Susceptibility to Misinformation and Confidence in the Accuracy of Eyewitnesses*, 139 Acta Psychologica 320 (2012).
2. Karen J. Mitchell & Maria S. Zaragoza, *Repeated Exposure to Suggestion and False Memory: The Role of Contextual Variability*, 35 J. of Memory & Language 246 (1996); Maria S. Zaragoza & Karen J. Mitchell, *Repeated Exposure to Suggestion and the Creation of False Memories*, 7 Psychol. Sci. 294 (1996).
3. Michael Ross et al., *Assessing the Accuracy of Conflicting Autobiographical Memories*, 26 Memory & Cognition 1233 (1998).
4. Adam J. L. Harris & Ulrike Hahn, *Bayesian Rationality in Evaluating Multiple Testimonies: Incorporating the Role of Coherence*, 35 J. of Experimental Psychol.: Learning, Memory, & Cognition 1366 (2009).
5. Steven E. Clark & Gary L. Wells, *On the Diagnosticity of Multiple-Witness Identifications*, 32 Law & Hum. Behav. 406 (2008).
6. David H. Dodd & Jeffrey M. Bradshaw, *Leading Questions and Memory: Pragmatic Constraints*, 19 J. of Verbal Learning & Verbal Behav. 695 (1980).
7. Lana A. Vornik et al., *The Power of the Spoken Word: Sociolinguistic Cues Influence the Misinformation Effect*, 11 Memory 101 (2003).
8. Frederick T. Bacon, *Credibility of Repeated Statements: Memory for Trivia*, 5 J. of Experimental Psychol.: Hum. Learning & Memory 241 (1979).
9. Alan S. Brown & Elizabeth J. Marsh, *Evoking False Beliefs About Autobiographical Experience*, 15 Psychonomic Bull. & Rev. 186 (2008).
10. Kimberlee Weaver et al., *Inferring the Popularity of an Opinion From Its Familiarity: A Repetitive Voice Can Sound Like a Chorus*, 92 J. of Personality & Soc. Psychol. 821 (2007).

WHY DOES REPETITION LEAD PEOPLE TO MAKE THESE ERRORS?

One possibility is that when we encounter information we have seen before, our cognitive system processes that information differently. Call it an adaptive shortcut: if you've seen x before and it didn't attack you the first time, then x is probably safe enough for your brain to spend less effort making sense of it. When information is processed with this shortcut, we do not know it directly, but we often experience a feeling of familiarity: "Ah, I have seen this before." Cognitive scientists have discovered that we also associate this kind of processing with a feeling of truth.[11] In other words, repeated information tends to feel more familiar, and more true, than unrepeated information.

IS IT THE REPETITION OF MISLEADING CLAIMS THAT MATTERS OR THE NUMBER OF PEOPLE WHO MAKE THEM?

We addressed the effects of repetition and number of eyewitnesses in two experiments. In our first experiment, we asked if repeating misleading claims would change the way people remembered a mock crime, regardless of how many eyewitnesses repeated those claims. To answer this question, people took part in an experiment based on a well-known eyewitness-memory error called the *misinformation effect*: They watched an event, then read a misleading description of the event, and finally were tested for what they remembered seeing.[12] Typically, many people report seeing the misleading details in the event.[13]

In our study, people first watched a video of an electrician who stole items while doing repairs at a client's house. Later, they read three eyewitness police reports—ostensibly written over three consecutive days—about the activities of the electrician. Sometimes, all three reports misled people about what happened in the video; other times only one of the three reports misled people. To manipulate the source(s) of the reports, we told half the people that three different eyewitnesses made these reports; we told the other half that the same eyewitness made all three reports. For example, people read three eyewitness reports from Day 1, Day 2, and Day 3: For half of the people, Eyewitness 5 made the Day 1 report; Eyewitness 9 made the Day 2 report; and Eyewitness 16 made the Day 3 report. The other half read the same reports—but all three reports were attributed to Eyewitness 9. Later, people took a test asking them about specific details they saw in the mock crime.[14]

In summary, people read the reports in one of four conditions: 1) three eyewitnesses, each making the same misleading claims across the three reports; 2) one eyewitness making the same claims across the three reports; 3) three eyewitnesses, only one of who makes the claims in only one report; and 4) one eyewitness who makes the claims in only one report.[15]

"[I]t was the repetition of misleading claims that mattered, not how many sources the information came from."

If what matters most is the number of fellow eyewitnesses giving innacurate, misleading information, then our results should show that people were the most misled when they read misinformation three times from three eyewitnesses. But if what matters most is the repetition of innacurate information, then our results should show that people became more misled when misleading claims were repeated, regardless of how many eyewitnesses made them.

Our results suggest that it was repetition that mattered most. We found three important results. First, and consistent with research on the misinformation effect, when people read misleading details about the crime they had witnessed, they incorporated some of those misleading details into their memory of the original crime. Second, when the misinformation was repeated, people became more misled than when the misinformation was not repeated. And third, people were similarly misled regardless of whether that misinformation was attributed to a single eyewitness who repeated it or to three independent eyewitnesses converging on the same misleading claims. In short, it was the repetition of misleading claims that mattered, not how many sources the misinformation came from.[16]

Let's return to our original example. Based on our results, we can predict that if John repeatedly tells Ringo the incorrect color of the robber's hat, Ringo will more likely be misled than if John tells him only once. But we can also predict that if that claim were repeated, it would make little difference if John says it, or if John, Paul, and George each make the same claim once: Either way, Ringo would hear it three times and be similarly misled. But what if Ringo had never seen the crime unfold in the first place and was trying to determine the truth about what occurred? How might John's repeated testimony affect Ringo's belief about what really happened? That is the question we addressed in our second study.

11. Adam L. Alter & Daniel M. Oppenheimer, *Uniting the Tribes of Fluency to Form a Metacognitive Nation*, 13 PERSONALITY & SOC. PSYCHOL. REV. 219 (2009); Hal L. Arkes et al., *Determinants of Judged Validity*, 27 J. OF EXPERIMENTAL SOC. PSYCHOL. 576 (1991); Alice Dechêne et al., *The Truth About the Truth: A Meta-Analytic Review of the Truth Effect*, 14 PERSONALITY & SOC. PSYCHOL. REV. 238 (2010); Colleen M. Kelley & D. Stephen Lindsay, *Remembering Mistaken for Knowing: Ease of Retrieval as a Basis for Confidence in Answers to General Knowledge Questions*, 32 J. OF MEMORY & LANGUAGE 1 (1993); Marcia Johnson et al., *Source Monitoring*, 114 PSYCHOL. BULL. 3 (1993); Christian Unkelbach, *Reversing the Truth Effect: Learning the Interpretation of Processing Fluency in Judgments of Truth*, 33 J. OF EXPERIMENTAL PSYCHOL.: LEARNING, MEMORY, & COGNITION 219 (2007); Christian Unkelbach & Christoph Stahl, *A Multinomial Modeling Approach to Dissociate Different Components of the Truth Effect*, 18 CONSCIOUSNESS & COGNITION 22 (2009).
12. Foster et al., *supra* note 1, at 321.
13. Elizabeth F. Loftus et al., *Semantic Integration of Verbal Information Into a Visual Memory*, 4 J. OF EXPERIMENTAL PSYCHOL.: HUM. LEARNING & MEMORY 19 (1978); Mitchell & Zaragoza, *supra* note 2; Melanie K. T. Takarangi et al., *Modernising the Misinformation Effect: The Development of a New Stimulus Set*, 20 APPLIED COGNITIVE PSYCHOL. 583 (2006).
14. Foster et al., *supra* note 1, at 321.
15. *Id.*
16. *Id.* at 322.

"[A] single eyewitness's repeated claims were as influential as the claims made by three eyewitnesses."

IS IT THE REPETITION OF EYEWITNESS CLAIMS OR THE NUMBER OF PEOPLE WHO MAKE THEM THAT AFFECT BELIEF IN THEIR ACCURACY?

Although our first experiment showed that repeating misinformation three times made people less accurate about what they saw, we still do not know if repeating inaccurate information would change how people might judge what happened when they never saw the crime unfold in the first place—this, of course, is the situation analogous to being a juror. It may be that people who did not see the crime would be even more susceptible to the influence of repetition: After all, they never saw the crime unfold and must rely entirely on the testimony of an eyewitness. But on the other hand, people may be more likely to scrutinize the sources of the claims when judging the accuracy of those claims, a behavior that should lead people to be more confident in claims that reach a consensus among multiple eyewitnesses.

In our second experiment, we wanted to know how the repetition of a claim and the number of sources making that claim might affect people's beliefs about the claim's accuracy. In our second experiment, we asked people to read the same three eyewitness reports from our first experiment, but in this case, people did not watch the video of the original crime. Thus, they could not know if claims about how the crime unfolded were true. After they read the eyewitness reports, people reported their confidence that each claim actually happened in the original crime.

Once again, our data suggest that it was repetition that mattered most. We found that when claims were repeated, people became more confident about those claims than when they were not repeated. In addition, people were similarly confident about repeated claims regardless of whether they were attributed to a single eyewitness who repeated it or three independent eyewitnesses all converging on the same claims. In short, it was the repetition of misleading claims that mattered, not how many sources the misinformation came from.[17]

SUMMARY AND CONCLUSIONS

Across two experiments, we asked two questions: First, does one person repeating inaccurate claims do more damage to the memories of other eyewitnesses than that same person making the claims only once? And second, when those inaccurate claims are repeated, does it matter how many people make them? The answers are yes and no, respectively. Our findings converged on the important role of repetition—over and above the role of how many people make the claims. More specifically, we found that the misleading claims of a single eyewitness were more damaging to fellow eyewitnesses' memories when that eyewitness repeated them, and that the claims of a single eyewitness were more credible to people who never saw the crime when the eyewitness repeated them. Moreover, a single eyewitness's repeated claims were as influential as the claims made by three eyewitnesses.

Why would one eyewitness repeating a claim become just as credible as three eyewitnesses? While the adaptive explanation we presented earlier—that if x has not eaten you before then x is probably safe—can explain why repeated information feels more true, it does not explain why people didn't put even more stock in claims repeated by multiple eyewitnesses.[18] We propose two possible explanations for this surprising finding. First, it may be that people did in fact put more stock into the repeated claims of multiple eyewitnesses,[19] but that people also saw a single eyewitness repeating claims as highly consistent. Indeed, consistency is one attribute that makes people appear more credible, and thus more accurate.[20] In other words, one eyewitness repeating a claim may make the claim more credible for a different reason than three eyewitnesses each stating the same claim once does. On the other hand it may be that people failed to attend to the source of the repeated claims when judging their accuracy. Indeed, the likely explanation of why repeated misinformation misleads subjects more than unrepeated misinformation is that subjects' increased feelings of familiarity are not accompanied by increases in their ability to monitor the source of that familiarity.[21] Although both of these mechanisms will produce the patterns we found here, they provide different pathways to finding a way to reduce the effects of repetition. As such, future research will need to disentangle the effects of these mechanisms.

Of course, in the real world, multiple eyewitnesses may stand out in a variety of ways that our written reports did not. In our study the distinction between a single eyewitness and multiple eyewitnesses was controlled so that they varied on identification number only. In court, these eyewitnesses would vary in superficial (accent, gender, etc.) and important (relationship to the suspect, motive, etc.) ways—distinctions that jurors might use to determine the credibility of their claims. But would these distinctions actually help to reduce the deleterious effects of repetition? That question is still one to be answered by additional experimentation.

In the meantime, the problems with inaccurate eyewitnesses during a trial are unquestionable.[22] Indeed, looking back at the 289 wrongfully convicted people freed by The Innocence Project to date shows that in more than 75% of cases, eyewitness testimony played a role in their wrongful convictions.[23] Our research suggests that a single person repeating inaccurate

17. *Id*. at 324.
18. Kelley & Lindsay *supra* note 11; Weaver et al. *supra* note 10; Unkelbach, *supra* note 11.
19. Harris & Hahn, *supra* note 4; Ross et al., *supra* note 3.
20. Neil Brewer & Anne Burke, *Effects of Testimonial Inconsistencies and Eyewitness Confidence on Mock-Juror Judgments*, 26 LAW AND HUM. BEHAV. 353 (2002).
21. Zaragoza & Mitchell, *supra* note 2.
22. Richard A. Leo, *Rethinking the Study of Miscarriages of Justice: Developing a Criminology of Wrongful Conviction*, 21 J. OF CONTEMP. CRIM. JUST. 201 (2005).
23. Innocence Project, http://www.innocenceproject.org/understand/Eyewitness-Misidentification.php

claims can lead jurors and other eyewitnesses to put more faith in those claims than they should—calling on us to be wary about the power of a single, repeated voice.

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Jury Instructions on Witness Identification

Brian H. Bornstein & Joseph A. Hamm

One of the most important things a judge does when presiding over a jury trial is instruct jurors on the law. No doubt judges themselves are well-versed in the law, and the language of jury instructions is the source of much pre-deliberation wrangling on the part of the attorneys. Yet once judges settle on proper instructions, how effectively do they communicate the law to jurors? What can courts do to make jury instructions more effective? Do judges' nonverbal actions, as well as their words, influence jury decisions?

These questions come up in any jury trial, but they are particularly important in trials relying heavily on witness-identification testimony,[1] for six reasons. First, misidentifications are the most common cause of false convictions.[2] Second, jurors have strong intuitions about the factors that make witness identifications more or less accurate, and many of those intuitions are erroneous.[3] Third, judges themselves have limited knowledge about the factors that do and do not affect identification accuracy.[4] Fourth, a vast amount of empirical research has been conducted on witness identification, giving judges a unique opportunity to guide juror decision making so that it comports with relevant data on the issue.[5] Fifth, testimony about witness identifications can often be quite technical—especially if it involves expert testimony, as these cases increasingly do—placing challenges on juror decision making.[6] And sixth, traditional procedural safeguards designed to reduce false identifications and convictions—such as voir dire, motions to suppress suggestive identifications, and cross-examination—have only limited effectiveness.[7] Thus, judges are well situated to aid jurors in making proper use of witness-identification testimony.

The purpose of this article is to review psychological research on the impact of jury instructions regarding witness identification, and to present data from several experiments we recently conducted on the topic.[8] Part I covers the issue of jurors' comprehension of judges' instructions, both generally and with regard to identification issues in particular, and concerning nonverbal as well as verbal behavior. Part II presents the results of three jury-simulation studies examining the effect of different kinds of jury instructions about witness-identification testimony. Finally, Part III summarizes the liter-

Footnotes

1. Most witness identifications are based on visual perception, hence *eyewitness* identifications. However, some identifications are based on other sensory modalities, especially auditory perception—often referred to as *earwitness* identifications. We therefore use the more general term *witness identification* unless discussing eyewitness or earwitness identification specifically.
2. Many, if not most, false convictions undoubtedly go undetected. Nonetheless, those that are detected, through DNA testing, show that over 75% involve mistaken witness identification. Gary L. Wells et al., *Eyewitness Identification Procedures: Recommendations for Lineups and Photospreads,* 22 Law & Hum. Behav. 603, 605 (1998); Gary L. Wells et al., *Eyewitness Evidence: Improving Its Probative Value,* 7 Psych. Sci. in the Public Interest 45, 48-9 (2006). For up-to-date figures on DNA exonerations and case studies on false convictions involving eyewitness testimony, see The Innocence Project website, http://www.innocenceproject.org. For a thorough summary of the research literature on eyewitness reliability and its legal implications, see State v. Henderson, 208 N.J. 208, 27 A. 3d 872 (2011).
3. For review, see Melissa Boyce et al., *Belief of Eyewitness Identification Evidence,* in The Handbook of Eyewitness Psychology (Vol. 2): Memory for People 501 (Roderick C. L. Lindsay et al., eds., 2007); J. Don Read & Sarah L. Desmarais, *Expert Psychology Testimony on Eyewitness Identification: A Matter of Common Sense? in* Expert Testimony on the Psychology of Eyewitness Identification 115 (Brian L. Cutler, ed., 2009).
4. Richard A. Wise & Martin A. Safer, *What US Judges Know and Believe about Eyewitness Testimony*, 18 Applied Cog. Psych. 427 (2004). Judicial misconceptions about witness-identification testimony have been found in samples of non-American judges as well. *See* Pär A. Granhag et al., *Eyewitness Testimony: Tracing the Beliefs of Swedish Professionals*," 23 Behav. Sci. & Law 709 (2005) (Swedish judges); Svein Magnussen et al., *What Judges Know About Eyewitness Testimony: A Comparison of Norwegian and U.S. Judges*, 14 Psych., Crime & Law 177 (2008) (Norwegian judges); Richard A. Wise et al., *A Comparison of Chinese Judges' and U.S. Judges' Knowledge and Beliefs About Eyewitness Testimony,* 16 Psych., Crime & Law 695 (2010) (Chinese judges).
5. Although judges cannot, of course, introduce new evidence when instructing the jury, they can nonetheless instruct jurors on the weight to give different elements of an identifying witness's testimony. Indeed, part of the New Jersey Supreme Court's mandate in *Henderson, supra* note, was to do just that. The new instructions have recently been promulgated and take effect on September 4, 2012. See Benjamin Weiser, *New Jersey Court Issues Guidance for Juries about Reliability of Eyewitnesses*, N.Y. Times (July 19, 2012).
6. *See generally* Tanja R. Benton et al., *Has Eyewitness Research Penetrated the American Legal System? A Synthesis of Case History, Juror Knowledge, and Expert Testimony*, *in* The Handbook of Eyewitness Psychology (Vol. 2): Memory for People 453 (Roderick C. L. Lindsay et al. eds., 2007); David Faigman et al., Modern Scientific Evidence: The Law and Science of Expert Testimony Vol. 2: Social & Behavioral Science 449 (2005).
7. Lori van Wallandael et al., *Mistaken Identification = Erroneous Conviction? Assessing and Improving Legal Safeguards*, *in* The Handbook of Eyewitness Psychology (Vol. 2): Memory for People 557 (Roderick C. L. Lindsay et al. eds., 2007); Jennifer L. Devenport et al., *Effectiveness of Traditional Safeguards Against Erroneous Conviction Arising from Mistaken Eyewitness Identification,*" *in* Expert Testimony on the Psychology of Eyewitness Identification 51 (Brian L. Cutler ed., 2009).
8. We would like to thank Ryan Anderson and Jenna Henkes for their assistance in conducting the studies.

ature and offers recommendations for judges dealing with cases involving witness identifications.

JURORS' COMPREHENSION OF INSTRUCTIONS

General Comprehension

Empirical research consistently demonstrates that jurors often struggle to comprehend judges' instructions.[9] This has been found in both mock-jury studies[10] and in post-trial interviews of actual jurors.[11] For example, Reifman and colleagues surveyed over 200 Michigan citizens summoned for jury duty, comparing those who served on criminal trials, civil trials, and those who ended up not serving.[12] They questioned participants on various aspects of procedural and substantive law. Performance varied somewhat depending on case and question type, but overall it was less than 50%, and in some instances jurors who actually received judges' instructions performed no better than uninstructed participants.[13]

Several jury-simulation studies have found that simplifying jury instructions significantly improves jurors' comprehension.[14] The revising efforts rely primarily on techniques such as using shorter sentences, replacing passive with active voice, simplifying vocabulary and reading difficulty, and eliminating legal jargon. Some studies have also found a benefit from including instructional aids such as flowcharts.[15] The success of these empirical studies led the American Bar Association to promote revising jury instructions for greater comprehensibility,[16] and several states have recently overhauled their jury instructions in part or in whole.[17]

Judges' Nonverbal Behaviors

"S]tudies show [the] language judges use to deliver jury instructions influences jurors' comprehension. But what about the things that judges do not say...?"

These studies show clearly that the exact language judges use to deliver jury instructions influences jurors' comprehension. But what about the things that judges *do not* say, that is, their demeanor and nonverbal behavior? It is a well-known psychological phenomenon that communicators' expectations, transmitted nonverbally, can unintentionally affect others' responses to the message.[18] Jurors are not immune to such effects.[19] For example, Andrea Halvorsen and colleagues conducted a jury-simulation experiment that varied the judge's expectation regarding the defendant's guilt: The judge believed the defendant to be either guilty or not guilty.[20] Although the instructions were identical in both conditions, adult (non-student) mock jurors were more likely to find the defendant guilty when the judge believed the defendant to be guilty (79.2%) than when the judge believed the defendant was not guilty (66.7%).[21] As the instructions were the same, the only possible explanation is that judges somehow conveyed their expectation via their demeanor. Importantly, the effect of judges' nonverbal behaviors was greater when they read standard jury instructions than when they read instructions that had been revised for greater comprehensibility.[22] Other research has found that

9. *See generally* Nancy S. Marder, *Bringing Jury Instructions into the Twenty-First Century*, 81 NOTRE DAME L. REV. 449, 454-58 (2006); Prof. Marder provides a cogent analysis of the reasons why jury instructions have remained resistant to change, as well as innovative approaches to improving jury instructions. *See also* Joel D. Lieberman, *The Psychology of the Jury Instruction Process*, *in* JURY PSYCHOLOGY: SOCIAL ASPECTS OF TRIAL PROCESS: PSYCHOLOGY IN THE COURTROOM, VOL. 1, 129 (Joel D. Lieberman & Daniel A. Krauss eds., 2009).
10. *E.g.*, Craig Haney & Mona Lynch, *Comprehending Life and Death Matters: A Preliminary Study of California's Capital Penalty Instructions*, 18 LAW & HUM. BEHAV. 411 (1994); Richard L. Wiener et al., *Comprehensibility of Approved Jury Instructions in Capital Murder Cases*, 80 J. APPLIED PSYCH. 455 (1995); Carolyn Semmler & Neil Brewer, *Using a Flow-Chart to Improve Comprehension of Jury Instructions*, 9 PSYCHIATRY PSYCHOL. & LAW 262 (2002); Richard L. Wiener et al., *Guided Jury Discretion in Capital Murder Cases: The Role of Declarative and Procedural Knowledge*, 10 PSYCHOL., PUB. POL'Y & LAW 516 (2004).
11. Alan Reifman et al., *Real Jurors' Understanding of the Law in Real Cases*, 16 LAW & HUM. BEHAV. 539 (1992); Theodore Eisenberg & Martin T. Wells, *Deadly Confusion: Juror Instructions in Capital Cases*, 79 CORNELL L. REV. 1 (1993).
12. Reifman et al., *supra* note 11, at 544. Participants were surveyed shortly after their service was over.
13. *Id.* at 546-49. Notably, the questions were true-false, so participants should have been able to score 50% correct merely by chance.
14. The seminal study was conducted by Robert P. Charrow & Veda R. Charrow, *Making Legal Language Understandable: A Psycholinguistic Study of Jury Instructions*, 79 COLUMBIA L. REV. 1306 (1979). For review, *see* Joel D. Lieberman & Bruce D. Sales, *What Social Science Teaches Us about the Jury Instruction Process*, 3 PSYCHOL., PUB. POL'Y & LAW 589 (1997); Michael T. Nietzel et al., *Juries: The Current State of the Empirical Literature*, *in* PSYCHOLOGY & LAW: THE STATE OF THE DISCIPLINE 23 (Ronald Roesch et al. eds., 1999); Lieberman, *supra* note 9.
15. Semmler & Brewer, *supra* note 10; Wiener et al., *Guided Jury Discretion*, *supra* note 10.
16. AM. BAR ASSOC'N, PRINCIPLES FOR JURIES AND JURY TRIALS (2005). Several of the principles address juror understanding, but the most directly relevant is Principle 14: "The court should instruct the jury in plain and understandable language regarding the applicable law and the conduct of deliberations." *Id.* at 20-21.
17. *See* Marder, *supra* note 9, at 475-81. Marder discusses the experience of several states, but she focuses on California's "plain-language" effort, which is probably the most ambitious attempt to date.
18. *See generally* Peter D. Blanck et al., *The Appearance of Justice: Judges' Verbal and Nonverbal Behavior in Criminal Trials*, 38 STANFORD L. REV. 89 (1985); Robert Rosenthal, *Covert Communication in Classrooms, Clinics, Courtrooms, and Cubicles*, 57 AMERICAN PSYCHOLOGIST 839 (2002).
19. Rosenthal, *supra* note 18, at 846.
20. Andrea M. Halvorsen et al., *Reducing the Biasing Effects of Judges' Nonverbal Behavior with Simplified Jury Instruction*, 82 J. APPLIED PSYCH. 590 (1997).
21. *Id.* at 595.
22. *Id.* It is also noteworthy that the authors did not observe an effect of judges' nonverbal behaviors when the mock jurors were students, as opposed to nonstudent adults. *Id.* at 594. Thus, those most likely to serve on actual juries—non-students—are most likely to be affected by judge's demeanor.

"[Can judges' demeanor] be used... to enhance jurors' comprehension or to improve their application of instructions[?]"

judge's nonverbal behavior influences mock jurors' perceptions of defendant liability in civil cases as well.[23]

These studies demonstrate that a judges' demeanor can influence trial outcomes, which is obviously undesirable. The question remains whether a judges' demeanor can be used for a good end, namely, to enhance jurors' comprehension or to improve their application of instructions. Our second study, described *infra*, explores this possibility.

Comprehension of Witness-Identification Instructions

The studies discussed thus far concern simplifying instructions generally, and not instructions about witness-identification testimony in particular. In identification cases, defense counsel can request a cautionary instruction that addresses concerns about identification accuracy. The best-known such instruction derives from *United States v. Telfaire*.[24] The *Telfaire* instructions direct jurors to consider a limited number of specific factors when evaluating eyewitness testimony, such as opportunity to observe the perpetrator, strength of the identification, viewing conditions that may have influenced the identification, and the witness's overall credibility.[25] Importantly, the instructions identify these factors, but they do not explain *how* they influence eyewitness memory. For example, they direct jurors to consider the witness's opportunity to observe, but they fail to go further and explain that better opportunity to observe is associated with more reliable memory. Some of these factors might seem like common sense, but, as mentioned previously, jurors' commonsense notions about eyewitness behavior are often erroneous.[26]

Two issues come up with respect to instructions about identification witnesses. First, how well do jurors understand the instructions? Second, what effect do the instructions have on jurors' decisions in cases that feature an identification witness? With respect to the first question, a meta-analysis[27] conducted by Nietzel and colleagues found that revised instructions improved mock jurors' memory for the instructions, though not their memory for trial facts.[28] There is some evidence that revised instructions are particularly effective at moderating jurors' evaluations of eyewitnesses.[29]

Professor Edie Greene conducted a series of jury simulation studies to examine the second question.[30] Greene compared the standard *Telfaire* instructions to a revised *Telfaire* condition, which used simpler language and explained how various factors influence eyewitness memory, as well as to a control condition with no cautionary instructions. There was little difference between the control and standard *Telfaire* conditions; however, the revised *Telfaire* instructions made mock jurors more skeptical about eyewitness testimony, and they also had a better understanding of eyewitness memory.[31] Neither set of instructions helped participants distinguish between good and poor eyewitnesses.[32] However, other research has found that instructions about which factors specifically influence witness credibility do moderate the influence of witness testimony.[33] Thus, there is some cause for cautious optimism that instructions dealing specifically with witness-identification testimony can improve juror decision making.

RESEARCH OVERVIEW

We conducted a series of mock-jury studies to examine different means of improving jurors' comprehension and application of witness-identification instructions. The techniques included rewriting the instructions, adding written instructions, and varying the judge's demeanor while delivering the instructions.[34] In addition to requesting a verdict, we assessed

23. Marisa E. Collett & Margaret B. Kovera, *The Effects of British and American Trial Procedures on the Quality of Juror Decision-Making*, 27 LAW & HUM. BEHAV. 403, 415-16 (2003).
24. 469 F.2d 552 (D.C. Cir. 1972).
25. Devenport et al., *supra* note 7, at 62.
26. *See* Benton et al., *supra* note 6, at 475-85.
27. Meta-analysis is a statistical technique by which relevant comparisons within similar studies are statistically aggregated to determine their overall effect.
28. Nietzel et al., *supra* note 14, at 35 (Table 2.4). This meta-analytic study compared "enhanced" to standard jury instructions, where enhanced instructions included efforts to improve comprehensibility, as well as other attempts to heighten the instructions' impact (e.g., through multiple deliveries).
29. *Id.*, at 35-36.
30. Edie Greene, *Judge's Instruction on Eyewitness Testimony: Evaluation and Revision*, 18 J. APPLIED SOC. PSYCH. 252 (1988).
31. *Id.*
32. *Id.* These findings—that *Telfaire* instructions increase juror skepticism but do not sensitize jurors to relevant evidence—have been replicated elsewhere. *See* Gabriella Ramirez et al., *Judges' Cautionary Instructions on Eyewitness Testimony*, 14 AMER. J. FORENSIC PSYCH. 31 (1996).
33. For example, Bollingmo and colleagues found that an instruction informing participants that a victim-witness's emotional expression is not a reliable cue to her credibility lessened the impact of variations in the witness's emotional expression. Guri Bollingmo et al., *The Effect of Biased and Non-biased Information on Judgments of Witness Credibility*, 15 PSYCH., CRIME & LAW 61 (2009). Importantly, the witness was giving a statement during a police interview, not testifying at trial; and the instruction came from the experimenter, not the judge. Nonetheless, the content of her statement—a description of an alleged rape scenario—was essentially the same as what her trial testimony would have been, and observers' evaluation of the witness's credibility was comparable to the sort of credibility judgment that jurors would make at trial.
34. All studies were jury simulations, in which student participants adopted the role of jurors and were presented with abbreviated case facts and jury instructions. The trial was presented in written format, and data were collected online. These methodological characteristics—especially the use of student mock jurors, abbreviated trial materials, and online data collection—might raise questions about the relevance of the findings to how "real" jurors decide "real" cases. These are legitimate concerns, but they are beyond the scope of the present article. Although little research shows that such characteristics influence juror decision making, there is a paucity of research that addresses the issue. *See* Brian H. Bornstein, *The Ecological Validity of Jury Simulations: Is the Jury Still Out?* 23 LAW

subjective comprehension, using the same three items in all of the studies.[35] Specifically, participants were asked how confident they were that they had followed the judge's instructions, how much difficulty they had in understanding the judge's instructions, and how effective the instructions were in helping them reach their verdict.

Study 1

The first study evaluated the method of simplifying *Telfaire* instructions used in Greene's work,[36] and we compared this to modifying the instructions further to present specific information more directly relevant to the task at hand for the jury. Although pattern instructions have the advantage of reducing the likelihood of reversal on appeal,[37] they are often criticized as not fitting the considerations of the current case.[38] The *Telfaire* instructions provide a perfect example of this because although they are most often thought of as eyewitness instructions, they are also applicable to other forms of sensory-witness identification, like earwitness identification.[39] Specifically, they contain a statement that addresses the possibility that other senses may be used.[40] The present study therefore investigated the applicability of *Telfaire* and modified *Telfaire* instructions to a case involving earwitness, rather than eyewitness, testimony.

To compare these different instruction-improvement methods, 201 undergraduate students read an online trial summary involving a home invasion in which the victim heard (but did not see) the defendant. The victim and a police officer testified about a voice lineup in which the victim identified the defendant as the perpetrator. Participants then read reasonable-doubt instructions and one of three versions of sensory-witness instructions (or a no-instruction control). To replicate Greene's work, one-quarter of participants were presented with the standard *Telfaire* instructions, and another quarter were presented with the *Telfaire* instructions as simplified by Greene. To compare this approach to a modification containing information more specific to earwitness identification, another quarter of the participants saw the *Telfaire* instructions modified to include the legally admissible issues involved with assessing earwitness identifications.[41] The remaining quarter of the participants saw no identification instructions and read only the instructions about reasonable doubt.

"[We] investigated the applicability of Telfaire... instructions to a case involving earwitness, rather than eyewitness, testimony."

We also created two versions of the instructions in which witnessing conditions (*e.g.,* perpetrator's voice disguise and the delay between the crime and the identification) were either more or less likely to elicit a correct identification. We did this because it is important to assess the impact of the instructions not only on comprehension itself, but also on jurors' use of evidence presented at trial. Ideally, simplified instructions should improve jurors' use of evidence; in the present trial, that would mean relying more on the identification evidence when the witnessing conditions were conducive to good memory for the perpetrator than when they were not.[42] After reading the randomly assigned instructions, participants were asked to return verdicts and complete subjective measures of comprehension.

Analyses indicated that although participants felt more confident in their verdict with the modified instructions than with standard *Telfaire* instructions,[43] there were no other differences

& HUM. BEHAV. 75 (1999) (discussing mock-juror and trial-presentation characteristics); Kevin M. O'Neil et al., *Web-based Research: Methodological Variables' Effects on Dropout and Sample Characteristics*, 25 BEHAV. RES. METHODS, INSTRUMENTS, & COMPUTERS 217 (2003) (discussing online research methods); Brian H. Bornstein & Sean G. McCabe, *Jurors of the Absurd? The Role of Consequentiality in Jury Simulation Research*, 32 FLA. ST. UNIV. L. REV. 443 (2005) (discussing real versus mock-juror decisions).

35. The studies did not include an objective measure of comprehension.
36. Greene, *supra* note 30.
37. Laurence J. Severance et al., *Toward Criminal Jury Instructions that Jurors Can Understand*, 75 J. CRIM. LAW & CRIMINOLOGY 198 (1984).
38. *E.g.*, Devenport et al., *supra* note 7, at 62.
39. Earwitness identification refers to "the process of a witness hearing the voice(s) of a perpetrator(s) and encoding that information in memory, retrieving the stored information when called to describe the speaker's voice and/or identify the speaker in a voice lineup, and finally, testifying or communicating those responses to a police officer, trial judge, and/or jury." A. Daniel Yarmey, *The Psychology of Speaker Identification and Earwitness Memory*, *in* THE HANDBOOK OF EYEWITNESS PSYCHOLOGY (VOL. 2): MEMORY FOR PEOPLE 101 (Rod C. L. Lindsay et al. eds., 2007), at 101.
40. "In general, a witness bases any identification he makes on his perception through the use of his senses. Usually the witness identifies an offender by the sense of sight—but this is not necessarily so, and he may use other senses." United States v Telfaire, *supra* note 24 at 559.
41. United States v. Angleton, 269 F. Supp. 2d 868 (S.D.Tex. 2003). In *Angleton*, the court was asked to rule regarding which aspects of an expert witness's testimony about the factors important for earwitness-identification accuracy were admissible in court. The court accepted testimony about the negative effects of an identification sample that is too long, the influence of conversations the identifier had before identification, and the preference of using an audio lineup versus a single voice. The court rejected testimony about preexisting beliefs, the identifier's familiarity with target, the quality of the recording, and the influence of the police during the identification.
42. This is often referred to as "sensitizing" jurors to the evidence. See Devenport et al., *supra* note 7; Greene, *supra* note 30. Put another way, revised instructions work if they reduce arbitrariness and improve jurors' application of the law and reliance on relevant evidence. *See* Shari S. Diamond, *Instructing on Death: Psychologists, Juries, and Judges*, 48 AMER. PSYCHOL. 423 (1993). Presumably, simplified jury instructions have this effect via better comprehension, an assumption for which there is some empirical support. *See* Richard L. Wiener et al., *Guided Jury Discretion*, *supra* note 10. Of course, if revised instructions *reduced* jurors' ability to apply the law correctly, then that would be a compelling argument against the revision.
43. $F(1,91)=4.06$, $p=.047$.

"[W]e conducted a third study to assess the effect of adding interactive instructions."

by instruction condition on any other measure of subjective comprehension. Additionally, the instructions did not have an effect on the mock jurors' verdict, nor did they sensitize them to good-vs.-poor witnessing conditions.

Study 2

A second study was conducted to evaluate how the presentation of the instructions might affect jurors' subjective experience with them. To better approximate the conditions under which jurors experience trials, jury instructions were videotaped and presented either with or without written transcripts for the participant's reference. One hundred and forty-one participants were asked to read either the good or poor witnessing version of the same trial summary used in the above study and then presented with the general jury instructions regarding their application of the law. Participants were also randomly assigned to receive or not receive written versions of the instructions and then asked to return verdicts and rate the instructions.[44]

This study also examined the effects of the judge's nonverbal communication. Because some research has shown that the judge's general demeanor can have an effect on the jury,[45] two versions of the jury instructions were videotaped and shown to participants. In the first version, which we refer to as the *encouraging* condition, the judge presented himself as interested and engaged in the trial and used language manipulated to be encouraging to the jury (*e.g.,* "It is *extremely important* that you perform your duties," and, "While the information presented here today may seem overwhelming, *I appreciate your commitment* to this trial."). In the second condition, called the *stoic* condition, the judge acted somewhat disinterested in the case, refrained from using encouraging speech, and emphasized the imperatives in the instructions (*e.g.,* "You *must* perform your duties," and "You *will not* be concerned...").[46]

Analyses uncovered no significant effects of whether the participant was given written instructions on subjective instruction ratings. However, they did uncover a significant interaction with the witnessing condition on the measure of verdict,[47] such that participants who were able to reference a written version of the instructions were significantly more likely to convict the defendant in the poor witnessing condition, indicating that the written version of the instructions actually decreased sensitivity to the relevant identification factors.[48] Contrastingly, the verdicts of participants who did not have the written instructions were not significantly affected by the witnessing condition.[49]

No significant effects were identified for the judge's nonverbal communication. Participants were equally likely to convict regardless of whether they saw the stoic or encouraging instructions.[50] There was also no interaction of the stoic-vs.-encouraging instructions with the good-vs.-bad witnessing conditions, indicating that the judge's demeanor did not improve mock jurors' decision making by making them more sensitive to the witness-identification testimony.

Study 3

Finally, because some research has shown that interactive presentation of material increases its usefulness,[51] we conducted a third study to assess the effect of adding interactive instructions. One hundred and two participants again read either the good or poor witnessing version of the trial summary, followed by the same videotaped instructions from the second study, which again either were or were not accompanied by a written transcript. This time, however, the instructions were also manipulated either to include or not include interactive instructions, creating a 2 (good-vs.-poor witnessing condition) by 2 (with or without interactive instructions) by 2 (with or without the accompanying written transcript) design. In the interactive-instruction condition, the video was cut into sections, each of which was immediately followed by a single multiple-choice question. Participants were unable to continue until they provided the correct answer. This method highlighted specific parts of the instructions relevant to their decision (*e.g.,* burden of proof, reasonable doubt) and was expected to improve mock jurors' subjective experience and comprehension.

Analyses again showed that the availability of written instructions did not affect participants' subjective estimate of comprehension.[52] Also, in contrast to Study 2, the written instructions did not desensitize participants to differences in the quality of the witness-identification testimony.[53] Analyses regarding the interactive-instructions manipulation indicated

44. Participants who received written instructions were split further into two different conditions: one that heard the instructions orally both before and after trial, and one that heard oral instructions only after the trial. These two groups are combined into a single "written-instructions" condition for present purposes.
45. *See* notes 18-23, *supra*, and accompanying text.
46. A pretest showed that participants found the encouraging judge significantly more friendly, encouraging, supportive, fair, kind, and approachable, and less stern and impatient, than the stoic judge.
47. $F(1,129)=5.42$, p = .021.
48. Of the participants who saw the good witnessing condition and the written instructions, 10% convicted. Of the participants who saw the poor witnessing condition and the written instructions, 39% convicted. Such a "desensitization" effect, if corroborated by additional research, would be quite troubling.
49. Of the participants in the good witnessing condition, 25% convicted, compared to 19% in the poor witnessing condition.
50. 20% of participants convicted in the stoic condition, whereas 29% convicted in the encouraging condition: $F(1,131)=1.38$, p = .24.
51. *E.g.*, Cathy W. Hall et al., *Psychology of Computer Use: XXXIII. Interactive Instructions with College-Level Science Courses*, 76 PSYCHOL. REPORTS 963 (1995). Interactive instructions are instructions that are intended to move the learner from a passive to an active role by requiring his or her input to proceed, much like the questions that required a response in the current study.
52. Confidence in following instructions, $F(1,90) = 1.23$, $p = .27$; difficulty in understanding instructions, $F(1,89) = .004$, $p = .95$; effectiveness of the instructions, $F(1,89) = .001$, $p = .97$
53. $F(1,84) = 2.961$, p = .09

that although participants who saw the interactive instructions perceived them as being significantly more effective,[54] there was only a marginally significant main effect on verdict[55] and no interaction with witnessing condition.

CONCLUSIONS AND RECOMMENDATIONS

The findings of the present studies are largely consistent with other research on jurors' comprehension of jury instructions. Specifically, various revisions to the instructions—such as modifying the language, providing written as well as oral instructions, and including interactive instructions—had slight effects on mock jurors' subjective comprehension of the instructions, but these effects were not consistent across studies or measures. The modifications did not exert an overall effect on verdicts, but even more importantly—and distressingly—they also did not, by and large, sensitize mock jurors to relevant variations in trial testimony (*i.e.*, good vs. bad witnessing conditions).[56] When the judge delivered instructions in a friendlier and more approachable manner, mock jurors perceived the judge more favorably; but the judge's demeanor likewise did not influence their verdicts or make them more sensitive to identification witness testimony.

Importantly, we observed almost no evidence that these modifications to jury instructions made mock jurors' decisions *worse*.[57] There is a clear benefit to making jurors feel that they understand the instructions better, even if that perception is not borne out in their verdicts.[58] Moreover, much research indicates that revising jury instructions leads to better objective comprehension as well.[59] Thus, modifying instructions would seem to be well worth the effort; although some innovations are costly, such as completely rewriting a jurisdiction's pattern jury instructions, others—such as making instructions interactive—are not.[60]

The trickier problem is in modifying instructions not only to improve comprehension—whether that is measured subjectively or objectively—but also to improve the quality of jurors' decision making. There is some evidence that this can occur, as with revising capital jury instructions;[61] however, the research on modifying instructions about witness identification has generally failed to accomplish this goal,[62] and the present studies do not afford a much more optimistic conclusion. Identification might be particularly difficult to address via instructions because of jurors' strong, yet often erroneous, intuitions about the topic.[63] Therefore, it might be necessary to educate jurors about the fallibility of identification witnesses in more detail, by incorporating into jury instructions the sorts of information that more commonly arise in expert testimony.[64] In light of the severe consequences of false identifications and resulting false convictions, further efforts on the part of judges to sensitize jurors to the vagaries of identification testimony would be highly worthwhile.

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54. $F(1,89) = 5.31$, $p = .024$.
55. Participants convicted less with interactive instructions (22%) than without (41%), $F(1,86) = 3.79$, $p = .055$.
56. Study 2 even found a desensitization effect, where written instructions made mock jurors worse at discriminating between good and poor identification witnesses. Because Study 3 did not replicate this finding, we consider it an anomaly and not a cause for concern.
57. It seems unlikely that simple modifications, such as simplifying complex language, would have a detrimental effect on jury decision making. However, other modifications could. For example, the inclusion of written and/or interactive instructions might confuse jurors, and the judge's demeanor could inadvertently send nonverbal cues affecting jurors' judgments (*see* notes 18-23, *supra*, and accompanying text).
58. For example, jurors who feel better about their jury service will be less likely to try and get out of jury duty in the future, and will also generally show higher levels of civic engagement.
59. *See* notes 14-17, *supra*, and accompanying text.
60. On innovations in jury instructions generally, *see* Marder, *supra* note 9.
61. *See* Wiener et al., *Guided Jury Discretion*, *supra* note 10.
62. *See* notes 24-33, *supra*, and accompanying text.
63. *E.g.*, Boyce et al., *supra* note 3; Read & Desmarais, *supra* note 3.
64. On safeguards generally, and their pros and cons relative to expert testimony, *see Henderson*, *supra* note 2; *see also* van Wallandael et al., *supra* note 7; Devenport et al., *supra* note 7.

The Resource Page: Focus on Eyewitness Evidence

RECENT COURT OPINIONS

Perry v. New Hampshire, 132 S. Ct. 716 (2012).

The United States Supreme Court rejected a due-process challenge to the admissibility of eyewitness testimony. While police had the defendant in handcuffs at the scene where someone had been reported breaking into cars, a witness looked out her window and identified the defendant. Although the circumstances were suggestible, the Court said there was no due-process issue since the officers hadn't acted improperly—the officers didn't try to arrange the witness's identification while the defendant was handcuffed and at the crime scene.

State v. Henderson, 27 A.3d 872 (N.J. 2011).

The New Jersey Supreme Court took this case—and the question of how courts should handle the reliability of eyewitness testimony—*very* seriously. As part of the process of deciding the case, the court appointed a special master, who heard seven expert witnesses in more than ten days of testimony and who reviewed more than 200 published scientific studies, articles, and books. (Two of the expert witnesses are authors in this issue, James Doyle and Gary Wells.) An extensive section of the court's opinion summarizes this information, covering how memory works, factors that may enhance confidence in identifications from lineups and showups, and factors that affect identification accuracy in real-life situations.

The court set out a new process for determining the admissibility of identification testimony. First, to obtain a pretrial hearing, the defendant must make an initial showing that there's "some evidence of suggestiveness that could lead to a mistaken identification." Second, the state must then show that the identification is reliable. Third, the ultimate burden to keep evidence out remains on the defendant, who must show "a very substantial likelihood of irreparable misidentification." Fourth, if the evidence is admitted, the court "should provide appropriate, tailored jury instructions." 27 A.3d at 919-20. The court provided guidance for trial courts about what factors should be considered in making these determinations. The court specifically required that a jury instruction about cross-racial-identification difficulties be given in such cases. 27 A.3d at 926.

As reported by Thomson West, the court's opinion runs 59 pages. The special master's 88-page (typewritten) report to the New Jersey Supreme Court is available online at http://www.judiciary.state.nj.us/pressrel/HENDERSON%20FINAL%20BRIEF%20.PDF%20%2800621142%29.PDF.

RECENT ARTICLES OF NOTE

Brandon L. Garrett, *Eyewitnesses and Exclusion*, 65 VANDERBILT L. REV. 451 (2012).

David A. Sonenshein & Robin Nilon, *Eyewitness Errors and Wrongful Convictions: Let's Give Science a Chance*, 89 ORE. L. REV. 263 (2010).

Note, *Evidence—Eyewitness Identifications—New Jersey Supreme Court Uses Psychological Research to Update Admissibility Standards for Out-of-Court Identifications*—State v. Henderson, *27 A.3d 872 (N.J. 2011)*, 125 HARV. L. REV. 1514 (2012).

John Monahan & Laurens Walker, *A Judges' Guide to Using Social Science*, 43 COURT REVIEW 156 (2007).

This article from *Court Review* provides a framework for courts to consider social-science information, including what's contained in this special issue of *Court Review* on eyewitness testimony. (Professor Monahan was one of the expert witnesses who testified before the special master during the New Jersey Supreme Court's consideration of eyewitness testimony.) You can find this *Court Review* article on the web at http://aja.ncsc.dni.us/publications/courtrv/cr43-4/CR43-4Monahan.pdf.

RECENT BOOKS OF INTEREST

BRANDON L. GARRETT, CONVICTING THE INNOCENT: WHERE CRIMINAL PROSECUTIONS GO WRONG. Harvard Univ. Press, 376 pp., 2011 ($39.95 hardcover; $18.95 paperback).

University of Virginia law professor Brandon Garrett considers what went wrong in the first 250 cases in which convictions were overturned based on DNA exonerations. Garrett contends that these wrongful convictions are the result of entrenched practices that go on regularly in our criminal courts. One chapter examines cases of eyewitness misidentification; another chapter sets out proposals to lessen the chances of wrongful convictions. If you'd prefer to read a book review rather than the 367-page book, University of Texas law professor Jennifer E. Laurin wrote a good one for the *Texas Law Review*, which you can find at 90 *Tex. L. Rev.* 1473 (2012).

OTHER RECENT DEVELOPMENTS

New Jersey Supreme Court Issues New Jury Instructions and Court Rules on Eyewitness Testimony
http://www.judiciary.state.nj.us/pressrel/2012/pr120719a.htm

Following up on its decision in *Henderson* (see above), the New Jersey Supreme Court released some new court rules and jury instructions on July 19, 2012. After the *Henderson* decision was issued in 2011, a committee drafted proposals for new jury instructions. The new instructions in New Jersey have been

designed to be tailored for use in a given case, with a list of factors jurors might consider in determining the reliability of eyewitness testimony; judges are to include only the factors appropriate in each case. The instructions are also tailored to the social-science research the court reviewed in *Henderson*.

The court also adopted a new rule that provides that out-of-court identifications resulting from lineups or showups won't be admissible unless a record of the procedures followed is made. The court also amended a rule regarding discovery in criminal cases, giving defendants a right to all notes and records regarding identification procedures and identifications made or attempted to be made. Both rules go into effect September 4, 2012.

WEBSITES OF INTEREST

The Innocence Project
http://www.innocenceproject.org

The Innocence Project is a national litigation and public-policy organization that works to exonerate wrongfully convicted defendants through DNA testing and to reform the criminal-justice system to prevent wrongful convictions. Its website has a wealth of information, including separate interactive educational pages on the most common causes of wrongful convictions: eyewitness misidentification, unvalidated or poor forensic science, false confessions, government misconduct, informants or snitches with incentives to lie, and bad lawyering.

To get to the information on these causes of wrongful convictions and how to prevent them, click on "Understanding the Causes" on the Innocence Project's home page. Each section has interactive materials, with video, etc. The video materials on eyewitness errors include an interview with a rape victim who identified the wrong man, even though she tried hard during the crime to concentrate on details so that she could identify her rapist. The interviews with her, one of the police officers involved in her identification of the defendant, and with researchers, showed how the misidentification in this rape case occurred. Also included are suggested best practices and links to further materials. This part of the website was jointly prepared by the Innocence Project and University of Virginia law professor Brandon Garrett.

Professor Gary Wells's Home Page
http://www.psychology.iastate.edu/~glwells/

The first thing that strikes you when you go to Professor Gary Wells's home page is that he's an expert in psychology, not web design. But he posts news and links regarding eyewitness-testimony research and developments here, and there are lots of links along with lots of good information. It's an eclectic collection, but a useful one. If you go to Google and type in "Gary Wells home page," you'll get links to some of the materials on his cite. Click on "The Eyewitness Test" to observe an event on video. You'll then have a chance to look at a lineup to see if you can pick out the person who committed the crime shown in the video.

National Association of Criminal Defense Lawyers Eyewitness ID Reform Overview
http://www.nacdl.org/criminaldefense.aspx?id=14779&fid=2154

The National Association of Criminal Defense Lawyers keeps a separate area on its website devoted to eyewitness-identification issues. Their collection is especially useful because it has been kept up to date. One part of the collection is a set of links to media coverage of eyewitness issues; the media coverage provides a good overview of recent developments in the area. Another section provides links to reports and papers about eyewitness-identification issues: a 2011 American Judicature Society report, a 2004 American Bar Association resolution about best practices, and several Innocence Project reports among them. The site isn't comprehensive, and it's defense-oriented, but it's worth a look.

Professor Jon Mueller's Resources on Psychology in the Courtroom
http://jfmueller.faculty.noctrl.edu/crow/topiccourtroom.htm

Professor Jon Mueller at North Central College in Naperville, Illinois, has put together an interesting collection of materials aimed at those who teach about psychology in the courtroom. There are links to lots of interesting studies on topics like why it's so hard to tell if someone is lying, how often those who evaluate mental competency of defendants agree with one another, and how memory can be manipulated. There are separate sections with links to articles about eyewitness testimony and false confessions. The site isn't comprehensive, but the references that have been selected are generally both interesting and written so as to make scientific concepts understandable. In addition, the site is frequently updated.

The Resource Page

WEBSITES OF INTEREST

Traffic Resource Center for Judges
www.trafficresourcecenter.org

The Traffic Resource Center for Judges provides background reports, articles, and recommendations regarding many of the situations judges handling traffic cases will face. Most of the site is accessible through two tabs—"Impaired Driving" and "Traffic." Under "Impaired Driving," you can find materials related to drunk driving, drugged driving, field-sobriety testing, alternative sentencing, DWI/DUI court evaluations, and transdermal monitoring systems. Under "Traffic," you can find materials about aggressive driving, bicycles, child safety, distracted driving, driver education, teen driving, and pedestrian safety. The website was put together by the National Center for State Courts with funding from the National Highway Transportation and Safety Administration (NHTSA).

To get an idea of what's on the site, we checked out the materials under field-sobriety testing. You'll find three studies from the 1990s validating field-sobriety tests as an indicator that a person's blood-alcohol concentration is above specified levels. Included is a final report submitted to NHTSA in 1998 that validated the measures for the .08 level that was then being adopted by many states. Also included are three government reports supporting the use of the horizontal-gaze-nystagmus test.

Not included are materials that might be used by the defense bar in these cases to challenge the reliability of these tests or the training manuals used to train law-enforcement officers (which are published by NHTSA). For a review of the literature and studies about the field-sobriety tests, see Steven J. Rubenzer, *The Standardized Field Sobriety Tests: A Review of Scientific and Legal Issues*, 32 LAW & HUMAN BEHAV. 293 (2008).

Even so, the website contains a wealth of useful material. On many issues, there are links to some appellate opinions on the topic, which can provide an easy start to research in the area. In other areas, like distracted driving, the site contains links to multiple reports—by government and nongovernment researchers—that would provide ready background facts for a presentation to a local civic club or student group, as well as background for the judge handling such cases.

In addition to the website, the Traffic Resource Center for Judges will respond to requests for information from judges and court staff. According to the news release announcing the Center's creation, its staff also can supply educational materials, such as PowerPoint slides and video clips from presentations on a variety of topics.

NEW REPORTS

Navigating the Hazards of E-Discovery: A Manual for Judges in State Courts Across the Nation (2d ed. 2012).
http://iaals.du.edu/images/wygwam/documents/publications/Navigating_eDiscovery_2nd_Edition.pdf

For many state-court judges, even ones handling regular civil dockets, you may not end up very often in the middle of a dispute involving the discovery of electronic materials (email, voicemails, documents on hard drives, and things like metadata). But when you do, it's nice to have a helpful guide to the issues and the process. The Institute for the Advancement of the American Legal System (IAALS) at the University of Denver has prepared a great guide, and it's tailored for state-court judges.

The guide has four parts: Part I provides a brief background on the vocabulary and technical aspects of electronic discovery. Part II looks at issues of concern to the litigants, including the cost of production and the preservation of evidence. Part III looks specifically at e-discovery challenges from the lawyer's perspective. Part IV looks at those issues from the court's perspective, including suggestions for courts to handle e-discovery disputes fairly but efficiently. Another section at the end of the manual provides a glossary of key terms and a list of materials for further reading.

The guide is easy to read, but it contains citations to all the key cases from around the United States on e-discovery, as well as references to leading articles and studies in the area. But the guide does a good job of summarizing the key points so that—at least in getting an overall understanding of the problems normally encountered in e-discovery—you'll be in pretty good shape after just reading this guide, which runs 30 pages (not including the appendices).

The section specifically addressed to judges is practical. For example, the guide encourages judges to start with whether the information is needed in the first place when it seems of marginal relevance and complicated balancing tests would have to be applied to determine who should pay the large costs that might be associated with retrieval, checking for privileged contents, and production: "It may well be that e-mails from ten years ago, or a legacy database [that] would require expensive restoration, is relevant, but before going through a complicated balancing test to determine who should pay, let the parties convince you that the information is needed in the first place."

If you handle e-discovery disputes from time to time, download the manual and keep it on your computer for reference. It won't answer all the questions in this area, but it's a good starting point, with plenty of references for more detailed information.

FOCUS ON EYEWITNESS EVIDENCE

Court Review surveys resources on eyewitness evidence at page 55.

51.110

EYEWITNESS IDENTIFICATION

The law places the burden upon the State to identify the defendant. The law does not require the defendant to prove (he) (she) has been wrongly identified. In weighing the reliability of eyewitness identification testimony, you first should determine whether any of the following factors existed and, if so, the extent to which they would affect accuracy of identification by an eyewitness. Factors you may consider are:

1. **The opportunity the witness had to observe. This includes any physical condition which could affect the ability of the witness to observe, the length of the time of observation, and any limitations on observation like an obstruction or poor lighting;**
2. **The emotional state of the witness at the time including that which might be caused by the use of a weapon or a threat of violence;**
3. **Whether the witness had observed the defendant(s) on earlier occasions;**
4. **Whether a significant amount of time elapsed between the crime charged and any later identification;**
5. **Whether the witness ever failed to identify the defendant(s) or made any inconsistent identification;**
6. **Whether there are any other circumstances that may have affected the accuracy of the eyewitness identification.**

Notes on Use

This instruction should be given whenever the trial judge believes there is any serious question about the reliability of eyewitness identification testimony. *State v. Willis*, 240 Kan. 580, 731 P.2d 287 (1987). However, unless there is evidence which causes the trial court to question the reliability of the eyewitness identification, this instruction should not be given. *State v. Harris*, 266 Kan. 270, 278, 970 P.2d 519 (1998). The judge should omit from the instruction any factors that clearly do not relate to evidence introduced at trial.

Comment

The appropriateness of this type of instruction was indicated by our Supreme Court in *Haines v. Goodlander*, 73 Kan. 183, 84 Pac. 986 (1906). In *Haines*, the Court stated that to comment by way of indicating to a jury the weight to give particular evidence would not be allowable, but "[Y]et there is no reason why the court should not in some cases refer to particular parts of the evidence and advise the jury as to the rules of law applicable to such facts." 73 Kan. at 190-191.

State v. Warren, 230 Kan. 385, 635 P.2d 1236 (1981), sets forth "rules of law applicable to" facts attending eyewitness identifications. If "eyewitness identification is a critical part of the prosecution's case and there is a serious question about the reliability of the identification, a cautionary instruction should be given advising the jury as to the factors to be considered in weighing the credibility of the eyewitness identification testimony." 230 Kan. at 397.

In *State v. Simpson*, 29 Kan. App. 2d 862, 32 P.3d 1226 (2001), the court held that failure to give the eyewitness identification instruction was clearly erroneous, and reversed a conviction even though the instruction was not requested at trial. The court found under the facts of the case that the eyewitness identification was a critical part of the prosecution's case and there was a serious question about the reliability of the identification.

In *State v. Mann*, 274 Kan. 670, 56 P3d 212 (2002), the court held in any criminal action in which eyewitness identification is a critical part of the prosecution's case and there is serious questions about the reliability of the identification, a cautionary instruction should be given advising the jury as to the factors to be considered in weighing the credibility of the eyewitness identification testimony. However, where the witness personally knows the individual being identified, the cautionary eyewitness identification instruction is not necessary and the accuracy of the identification can be sufficiently challenged through cross-examination.

Kansas previously applied the factors in *Neil v. Biggers*, 409 U.S. 188, 199-20, 34 L. Ed. 2d 401, 93 S. Ct. 375 (1972), to evaluate the reliability of an eyewitness identification. *State v. Hunt*, 275 Kan. 811, 69 P.3d 571 (2003), dealt with admissibility of eyewitness identification and not the sufficiency of the jury instruction. *Hunt* adopted the factors in *State v. Ramirez*, 817 P.2d 774 (Utah 1991). In *Ramirez,* the court enumerated five factors for evaluating the reliability of eyewitness identifications: (1) the opportunity of the witness to view the actor during the event; (2) the witness' degree of attention to the actor at the time of the event; (3) the witness' capacity to observe the event, including his or her physical and mental acuity; (4) whether the witness' identification was made spontaneously and remained consistent thereafter, or whether it was the product of suggestion; and (5) the nature of the event being observed and the likelihood that the witness would perceive, remember, and relate it correctly. In *Hunt*, the court stated, "[O]ur acceptance [of the *Ramirez* model] should not be considered as a rejection of the *Biggers* model, but, rather, as a refinement in the analysis."

In *State v. Calvin*, 279 Kan. 193, 205-07, 105 P.3d 719 (2005), the court held the factors set out in PIK 3d 52.20 contemplate an eyewitness who does not know the defendant personally. Where the eyewitness personally knows the individual being identified, the cautionary eyewitness identification instruction is not necessary. The accuracy of the identification can be sufficiently challenged through cross-examination.

The Kansas Supreme Court held that former factor 6 should be deleted from PIK 3d 52.20. Instructing the jury that the degree of certainty expressed by the witness at the time of an identification of the defendant is a factor they should weigh when evaluating the reliability of

that eyewitness testimony prompts the jury to conclude that eyewitness identification evidence is more reliable when the witness expresses greater certainty. *State v. Anderson*, 294 Kan. ___, 276 P.3d 200 (2012); *State v. Mitchell*, 294 Kan. ___ , 275 P.3d 905 (2012).

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27 A.3d 872

STATE OF NEW JERSEY, PLAINTIFF–APPELLANT, v. LARRY R. HENDERSON, DEFENDANT–RESPONDENT.

Argued January 20, 2009—Remanded February 26, 2009—Special Master's Report Filed June 21, 2010—Reargued March 28, 2011—Decided August 24, 2011.

SYNOPSIS

Background: Defendant was convicted in the Superior Court, Law Division, Camden County, of reckless manslaughter, aggravated assault, and three weapons offenses. He appealed. The Superior Court, Appellate Division, 397 N.J.Super. 398, 937 A.2d 988, reversed and remanded for a new *Wade* hearing on whether an eyewitness identification was reliable despite an identification procedure that was presumed to be impermissibly suggestive. The state filed a petition for certification, which was granted. The Supreme Court, —— N.J. ——, —— A.3d ——, 2009 WL 510409, remanded to the trial court for a plenary hearing to decide whether the assumptions and other factors reflected in the two-part *Manson/Madison* test for the admissibility of eyewitness-identification evidence remained valid.

Holdings: On return from remand, the Supreme Court held that:

(1) *Manson/Madison* test would be revised based on scientific evidence presented on remand;

(2) a jury instruction on cross-racial identification should be given whenever cross-racial identification is in issue at trial, abrogating *State v. Cromedy,* 158 N.J. 112, 727 A.2d 457; and

(3) new rule of law set forth in the decision to revise the *Manson/Madison* test would be applied to future cases only except for defendant and another defendant in a companion case.

Affirmed as modified and remanded.

1. Criminal Law ⇐339.6

Reliability is the linchpin in determining the admissibility of identification testimony.

2. Criminal Law ⇐481, 1158.16

Courts generally defer to a special master's credibility findings regarding the testimony of expert witnesses.

3. Criminal Law ⇐1158.1

Supreme Court evaluates a special master's factual findings in the same manner as it would the findings and conclusions of a judge sitting as a finder of fact; the Supreme Court therefore accepts the fact findings to the extent that they are supported by substantial credible evidence in the record but owes no particular deference to the special master's legal conclusions.

4. Criminal Law ⇐486(2)

Scientific theories can be accepted as reliable when they are based on a sound, adequately founded scientific methodology involving data and information of the type reasonably relied on by experts in the scientific field.

5. Criminal Law ⇐388.1

In general, proponents can prove the reliability of scientific evidence by offering (1) the testimony of knowledgeable experts, (2) authoritative scientific literature, and (3) persuasive judicial decisions that acknowledge such general acceptance of expert testimony; a court also looks for general acceptance of scientific evidence within the relevant scientific community.

6. Criminal Law ⇐474.3(2)

Manson/Madison test for the admissibility of eyewitness-identification evidence would be revised based on scientific evidence presented at a hearing on whether the test remained valid; the hearing revealed that the test did not provide a sufficient measure for reliability, did not deter improper police practices,

and overstated a jury's innate ability to evaluate eyewitness testimony.

7. Constitutional Law ⇐4657

Expanded protections in the revised *Manson/Madison* test for the admissibility of eyewitness-identification evidence stem from the due process rights guaranteed under the New Jersey Constitution. N.J.S.A. Const. Art. 1, par. 1.

8. Criminal Law ⇐339.11(3)

To obtain a pretrial hearing on the admissibility of eyewitness-identification evidence, a defendant has the initial burden of showing some evidence of suggestiveness that could lead to a mistaken identification; that evidence, in general, must be tied to a "system variable," i.e., a variable within the control of the legal system, not an "estimator variable," i.e., a variable over which the legal system has no control.

9. Criminal Law ⇐339.11(2, 3)

At a pretrial hearing on the admissibility of eyewitness-identification evidence, which a defendant obtains by showing some evidence of suggestiveness that could lead to a mistaken identification, the state must offer proof to show that the proffered eyewitness identification is reliable, accounting for system variables and estimator variables, subject to the court's ability to end the hearing at any time if it finds from the testimony that defendant's threshold allegation of suggestiveness is groundless.

10. Criminal Law ⇐339.11(2, 3)

At a pretrial hearing on the admissibility of eyewitness-identification evidence, the ultimate burden remains on the defendant to prove a very substantial likelihood of irreparable misidentification; to do so, a defendant can cross examine eyewitnesses and police officials and present witnesses and other relevant evidence linked to system variables and estimator variables.

11. Criminal Law ⇐339.11(2)

At a pretrial hearing on the admissibility of eyewitness-identification evidence, a defendant is free to make a tactical choice not to explore an estimator value, so as to "save up" cross examination for trial.

12. Criminal Law ⇐339.6

If a court, after weighing the evidence presented at a pretrial hearing on the admissibility of eyewitness-identification evidence, finds from the totality of the circumstances that the defendant has demonstrated a very substantial likelihood of irreparable misidentification, the court should suppress the identification evidence.

13. Criminal Law ⇐339.11(2)

To evaluate whether there is evidence of suggestiveness to trigger a pretrial hearing on the admissibility of eyewitness-identification evidence, courts should consider the following non-exhaustive list of system variables: blind administration, pre-identification instructions, lineup construction, feedback, recording confidence, multiple viewings, showups, private actors, and other identifications made.

14. Criminal Law ⇐339.11(2), 741(2)

If at any time during a pretrial hearing on the admissibility of eyewitness-identification evidence, the trial court concludes from the testimony that defendant's initial claim of suggestiveness is baseless, and if no other evidence of suggestiveness has been demonstrated by the evidence, the court may exercise its discretion to end the hearing; under those circumstances, the court need not permit the defendant or require the state to elicit more evidence about estimator variables, as that evidence would be reserved for the jury.

15. Criminal Law ⇐632(5), 661, 680(1)

Trial courts always have the authority to direct the mode and order of proofs, and they may exercise that discretion to focus pretrial hearings as needed.

16. Criminal Law ⇐339.6

If some actual proof of suggestiveness remains at a pretrial hearing on the admissibility of eyewitness-identification evidence after the court has considered system variables, the court should consider the system variables as well as the following non-exhaustive list of estimator variables to evaluate the overall reliability of an identification and determine its admissibility: stress, weapon focus, duration, distance and lighting, witness characteristics, characteristics of perpetrator, memory decay, race-bias, opportunity to view the criminal at the time of the crime, degree of attention, accuracy of prior description of the criminal, level of certainty demonstrated at the confrontation, and the time between the crime and the confrontation.

17. Criminal Law ⇐339.11(2)

At pretrial hearings on the admissibility of eyewitness-identification evidence, trial courts should make factual findings about relevant system variables and estimator variables to lay the groundwork for proper jury instructions and to facilitate meaningful appellate review.

18. Criminal Law ⇐782(5.5)

Enhanced instructions must be given to guide juries about the various factors that may affect the reliability of an identification in a particular case; those instructions are to be included in the court's comprehensive jury charge at the close of evidence.

19. Criminal Law ⇐782(5.5)

Jury instructions about the various factors that may affect the reliability of an identification may be given during trial if warranted.

20. Criminal Law ⇐474.3(2)

Expert testimony about the import and effect of certain variables on the reliability of eyewitness identifications may be introduced at trial, but only if otherwise appropriate. N.J.S.A. 2A:84A, App. A, Rules of Evid., N.J.R.E. 702.

21. Criminal Law ⇐472, 478(1), 486(2)

Expert testimony is admissible if it meets three criteria: (1) the intended testimony must concern a subject matter that is beyond the ken of the average juror, (2) the field testified to must be at a state of the art such that an expert's testimony could be sufficiently reliable, and (3) the witness must have sufficient expertise to offer the intended testimony. N.J.S.A. 2A:84A, App. A, Rules of Evid., N.J.R.E. 702.

22. Criminal Law ⇐474.3(2)

Experts may not opine on the credibility of a particular eyewitness. N.J.S.A. 2A:84A, App. A, Rules of Evid., N.J.R.E. 702.

23. Criminal Law ⇐339.6, 663

In rare cases, judges may use their discretion to redact parts of identification testimony, consistent with the rule allowing the exclusion of evidence if its probative value is substantially outweighed by the danger of unfair prejudice or other considerations. N.J.S.A. 2A:84A, App. A, Rules of Evid., N.J.R.E. 403.

24. Criminal Law ⇐782(5.5)

A jury instruction on cross-racial identification should be given whenever cross-racial identification is in issue at trial; abrogating *State v. Cromedy*, 158 N.J. 112, 727 A.2d 457.

25. Courts ⇐100(1)

New rule of law set forth in the Supreme Court's decision to revise the *Manson/Madison* test for the admissibility of eyewitness-identification evidence would be applied to future cases only except for defendant in the case before the Supreme Court and another defendant in a companion case decided by the Supreme Court on the same day; defendants had been able to challenge identification evidence under *Manson* and *Madison* and present arguments both before and at trial, the state and trial courts had relied in good faith on settled constitutional principles in applying the *Manson/Madison* test for many years, and applying the new

framework retroactively would affect an immense number of cases because eyewitness identifications are a staple of criminal trials.

26. Courts ⇐100(1)

When a decision sets forth a new rule, three factors are considered to determine whether to apply the rule retroactively: (1) the purpose of the rule and whether it would be furthered by a retroactive application, (2) the degree of reliance placed on the old rule by those who administered it, and (3) the effect a retroactive application would have on the administration of justice; the factors are not of equal weight, as the first factor is often the pivotal consideration, and the remaining two factors come to the forefront when the rule's purpose alone does not resolve the question of retroactivity.

27. Courts ⇐100(1)

In determining whether a new rule set forth in a decision should be applied retroactively, when the new rule is designed to enhance the reliability of the factfinding process, courts consider the likelihood of untrustworthy evidence being admitted under the old rule and whether the defendant had alternate ways of contesting the integrity of the evidence being introduced against him.

28. Courts ⇐100(1)

Central consideration of the second factor to consider in determining whether a new rule set forth in a decision should be applied retroactively, specifically the degree of reliance on the prior rule, is whether the prior rule was administered in good-faith reliance on then-prevailing constitutional norms.

29. Courts ⇐100(1)

Third factor to consider in determining whether a new rule set forth in a decision should be applied retroactively, specifically the effect on the administration of justice, recognizes that courts must not impose unjustified burdens on the criminal-justice system; when the effect is unknown but undoubtedly substantial, that weighs in favor of limited retroactive application.

30. Courts ⇐100(1)

Supreme Court can apply a new rule set forth in a decision in one of four ways: (1) purely prospectively to cases in which the operative facts arise after the new rule has been announced, (2) in future cases and in the case in which the rule is announced but not in any other litigation that is pending or has reached final judgment at the time the new rule is set forth, (3) pipeline retroactivity, rendering it applicable in all future cases, the case in which the rule is announced, and any cases still on direct appeal, and (4) complete retroactive effect to all cases.

Deborah C. Bartolomey, Deputy Attorney General, argued the cause for appellant (*Paula T. Dow,* Attorney General of New Jersey, attorney).

Joshua D. Sanders and *Joseph E. Krakora,* Assistant Deputy Public Defenders, argued the cause for respondent (*Yvonne Smith Segars,* Public Defender, attorney).

Alison S. Perrone argued the cause for amicus curiae Association of Criminal Defense Lawyers of New Jersey.

Barry C. Scheck, a member of the New York bar, argued the cause for amicus curiae Innocence Project, Inc. (*Gibbons,* attorneys; *Mr. Scheck, Lawrence S. Lustberg,* and *Ellen P. Lubensky,* on the briefs).

Chief Justice RABNER delivered the opinion of the Court.

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I. Introduction

In the thirty-four years since the United States Supreme Court announced a test for the admission of eyewitness identification evidence, which New Jersey adopted soon after, a vast body of scientific research about human memory has emerged. That body of work casts doubt on some commonly held views relating to memory. It also calls into question the vitality of the current legal framework for analyzing the reliability of eyewitness identifications. *See Manson v. Brathwaite*, 432 *U.S.* 98, 97 *S.Ct.* 2243, 53 *L.Ed.*2d 140 (1977); *State v. Madison*, 109 *N.J.* 223, 536 *A.*2d 254 (1988).

In this case, defendant claims that an eyewitness mistakenly identified him as an accomplice to a murder. Defendant argues that the identification was not reliable because the officers investigating the case intervened during the identification process and unduly influenced the eyewitness. After a pretrial hearing, the trial court found that the officers' behavior was not impermissibly suggestive and admitted the evidence. The Appellate Division reversed. It held that the officers' actions were presumptively suggestive because they violated guidelines issued by the Attorney General in 2001 for conducting identification procedures.

After granting certification and hearing oral argument, we remanded the case and appointed a Special Master to evaluate scientific and other evidence about eyewitness identifications. The Special Master presided over a hearing that probed testimony by seven experts and produced more than 2,000 pages of transcripts

along with hundreds of scientific studies. He later issued an extensive and very fine report, much of which we adopt.

We find that the scientific evidence considered at the remand hearing is reliable. That evidence offers convincing proof that the current test for evaluating the trustworthiness of eyewitness identifications should be revised. Study after study revealed a troubling lack of reliability in eyewitness identifications. From social science research to the review of actual police lineups, from laboratory experiments to DNA exonerations, the record proves that the possibility of mistaken identification is real. Indeed, it is now widely known that eyewitness misidentification is the leading cause of wrongful convictions across the country.

We are convinced from the scientific evidence in the record that memory is malleable, and that an array of variables can affect and dilute memory and lead to misidentifications. Those factors include system variables like lineup procedures, which are within the control of the criminal justice system, and estimator variables like lighting conditions or the presence of a weapon, over which the legal system has no control. To its credit, the Attorney General's Office incorporated scientific research on system variables into the guidelines it issued in 2001 to improve eyewitness identification procedures. We now review both sets of variables in detail to evaluate the current *Manson/Madison* test.

In the end, we conclude that the current standard for assessing eyewitness identification evidence does not fully meet its goals. It does not offer an adequate measure for reliability or sufficiently deter inappropriate police conduct. It also overstates the jury's inherent ability to evaluate evidence offered by eyewitnesses who honestly believe their testimony is accurate.

Two principal steps are needed to remedy those concerns. First, when defendants can show some evidence of suggestiveness, all relevant system and estimator variables should be explored at pretrial hearings. A trial court can end the hearing at any time, however, if the court concludes from the testimony that defendant's threshold allegation of suggestiveness is groundless. Otherwise, the trial judge should weigh both sets of variables to decide if the evidence is admissible.

Up until now, courts have only considered estimator variables if there was a finding of impermissibly suggestive police conduct. In adopting this broader approach, we decline to order pretrial hearings in every case, as opposed to cases in which there is some evidence of suggestiveness. We also reject a bright-line rule that would require suppression of reliable evidence any time a law enforcement officer missteps.

Second, the court system should develop enhanced jury charges on eyewitness identification for trial judges to use. We anticipate that identification evidence will continue to be admitted in the vast majority of cases. To help jurors weigh that evidence, they must be told about relevant factors and their effect on reliability. To that end, we have asked the Criminal Practice Committee and the Committee on Model Criminal Jury Charges to draft proposed revisions to the current model charge on eyewitness identification and address various system and estimator variables. With the use of more focused jury charges on those issues, there will be less need to call expert witnesses at trial. Trial courts will still have discretion to admit expert testimony when warranted.

The factors that both judges and juries will consider are not etched in stone. We expect that the scientific research underlying them will continue to evolve, as it has in the more than thirty years since *Manson*. For the same reason, police departments are not prevented from improving their practices as we learn more about variables that affect memory. New approaches, though, must be based on reliable scientific evidence that experts generally accept.

The changes outlined in this decision are significant because eyewitness identifications bear directly on guilt or innocence. At stake is the very integrity of the criminal justice system and the courts' ability to conduct fair trials. Ultimately, we believe that the framework described below will both protect the rights of

defendants, by minimizing the risk of misidentification, and enable the State to introduce vital evidence.

The revised principles in this decision will apply purely prospectively except for defendant Larry Henderson and defendant Cecilia Chen, the subject of a companion case also decided today. *See State v. Chen*, 207 *N.J.* 404, 25 *A.*3d 256 (2011). We remand defendant Henderson's case for a new pretrial hearing consistent with this opinion to determine the admissibility of the eyewitness evidence introduced at his trial.

II. Facts and Procedural History

A. Facts

In the early morning hours of January 1, 2003, Rodney Harper was shot to death in an apartment in Camden. James Womble witnessed the murder but did not speak with the police until they approached him ten days later.

Womble and Harper were acquaintances who occasionally socialized at the apartment of Womble's girlfriend, Vivian Williams. On the night of the murder, Womble and Williams brought in the New Year in Williams' apartment by drinking wine and champagne and smoking crack cocaine. Harper had started the evening with them but left at around 10:15 p.m. Williams also left roughly three hours later, leaving Womble alone in the apartment until Harper rejoined him at 2:00 to 2:30 a.m.

Soon after Harper returned, two men forcefully entered the apartment. Womble knew one of them, co-defendant George Clark, who had come to collect $160 from Harper. The other man was a stranger to Womble.

While Harper and Clark went to a different room, the stranger pointed a gun at Womble and told him, "Don't move, stay right here, you're not involved in this." He remained with the stranger in a small, narrow, dark hallway. Womble testified that he "got a look at" the stranger, but not "a real good look." Womble also described the gun pointed at his torso as a dark semiautomatic.

Meanwhile, Womble overheard Clark and Harper argue over money in the other room. At one point, Harper said, "do what you got to do," after which Womble heard a gunshot. Womble then walked into the room, saw Clark holding a handgun, offered to get Clark the $160, and urged him not to shoot Harper again. As Clark left, he warned Womble, "Don't rat me out, I know where you live."

Harper died from the gunshot wound to his chest on January 10, 2003. Camden County Detective Luis Ruiz and Investigator Randall MacNair were assigned to investigate the homicide, and they interviewed Womble the next day. Initially, Womble told the police that he was in the apartment when he heard two gunshots outside, that he left to look for Harper, and that he found Harper slumped over in his car in a nearby parking lot, where Harper said he had been shot by two men he did not know.

The next day, the officers confronted Womble about inconsistencies in his story. Womble claimed that they also threatened to charge him in connection with the murder. Womble then decided to "come clean." He admitted that he lied at first because he did not want to "rat" out anyone and "didn't want to get involved" out of fear of retaliation against his elderly father. Womble led the investigators to Clark, who eventually gave a statement about his involvement and identified the person who accompanied him as defendant Larry Henderson.

The officers had Womble view a photographic array on January 14, 2003. That event lies at the heart of this decision and is discussed in greater detail below. Ultimately, Womble identified defendant from the array, and Investigator MacNair prepared a warrant for his arrest. Upon arrest, defendant admitted to the police that he had accompanied Clark to the apartment where Harper was killed, and heard a gunshot while waiting in the hallway. But defendant denied witnessing or participating in the shooting.

A grand jury in Camden County returned an indictment charging Henderson and Clark with the following offenses: first-degree

murder, *N.J.S.A.* 2C:11–3(a)(1) or (2); second-degree possession of a firearm for an unlawful purpose, *N.J.S.A.* 2C:39–4(a); fourth-degree aggravated assault, *N.J.S.A.* 2C:12–1(b)(4); third-degree unlawful possession of a weapon, *N.J.S.A.* 2C:39–5(b); and possession of a weapon having been convicted of a prior offense, *N.J.S.A.* 2C:39–7(a) (Henderson) and –7(b) (Clark).

B. Photo Identification and *Wade* Hearing

As noted above, Womble reviewed a photo array at the Prosecutor's Office on January 14, 2003, and identified defendant as his assailant. The trial court conducted a pretrial *Wade*[1] hearing to determine the admissibility of that identification. Investigator MacNair, Detective Ruiz, and Womble all testified at the hearing. Cherry Hill Detective Thomas Weber also testified.

Detective Weber conducted the identification procedure because, consistent with guidelines issued by the Attorney General, he was not a primary investigator in the case. *See* Office of the Attorney Gen., N.J. Dep't of Law and Pub. Safety, *Attorney General Guidelines for Preparing and Conducting Photo and Live Lineup Identification Procedures* 1 (2001) (Attorney General Guidelines or Guidelines). According to the Guidelines, discussed in detail below, primary investigators should not administer photo or live lineup identification procedures "to ensure that inadvertent verbal cues or body language do not impact on a witness." *Ibid.*

Ruiz and MacNair gave Weber an array consisting of seven "filler" photos and one photo of defendant Henderson. The eight photos all depicted headshots of African–American men between the ages of twenty-eight and thirty-five, with short hair, goatees, and, according to Weber, similar facial features. At the hearing, Weber was not asked whether he knew which photograph depicted the suspect. (Later at trial, he said he did not know.)

The identification procedure took place in an interview room in the Prosecutor's Office. At first, Weber and Womble were alone

1 *United States v. Wade*, 388 *U.S.* 218, 87 *S.Ct.* 1926, 18 *L.Ed.*2d 1149 (1967).

in the room. Weber began by reading the following instructions off a standard form:

> In a moment, I will show you a number of photographs one at a time. You may take as much time as you need to look at each one of them. You should not conclude that the person who committed the crime is in the group merely because a group of photographs is being shown to you. The person who committed the crime may or may not be in the group, and the mere display of the photographs is not meant to suggest that our office believes the person who committed the crime is in one of the photographs. You are absolutely not required to choose any of the photographs, and you should feel not obligated to choose any one. The photographs will be shown to you in random order. I am not in any way trying to influence your decision by the order of the pictures presented. Tell me immediately if you recognize the person that committed the crime in one of the photographs. All of the photographs will be shown to you even if you select a photograph.
>
> Please keep in mind that hairstyles, beards, and mustaches are easily changed. People gain and lose weight. Also, photographs do not always show the true complexion of a person. It may be lighter or darker than shown in the photograph. If you select a photograph, please do not ask me whether I agree with or support your selection. It is your choice alone that counts. Please do not discuss whether you selected a photograph with any other witness who may be asked to look at these photographs.

To acknowledge that he understood the instructions, Womble signed the form.

Detective Weber pre-numbered the eight photos, shuffled them, and showed them to Womble one at a time. Womble quickly eliminated five of the photos. He then reviewed the remaining three, discounted one more, and said he "wasn't 100 percent sure of the final two pictures." At the *Wade* hearing, Detective Weber recalled that Womble "just shook his head a lot. He seemed indecisive." But he did not express any fear to Weber.

Weber left the room with the photos and informed MacNair and Ruiz that the witness had narrowed the pictures to two but could not make a final identification. MacNair and Ruiz testified at the hearing that they did not know whether defendant's picture was among the remaining two photos.

MacNair and Ruiz entered the interview room to speak with Womble. According to MacNair's testimony at the *Wade* hearing, he and Ruiz believed that Womble was holding back—as he had

earlier in the investigation—based on fear. Ruiz said Womble was "nervous, upset about his father."

In an effort to calm Womble, MacNair testified that he "just told him to focus, to calm down, to relax and that any type of protection that [he] would need, any threats against [him] would be put to rest by the Police Department." Ruiz added, "just do what you have to do, and we'll be out of here." In response, according to MacNair, Womble said he "could make [an] identification."

MacNair and Ruiz then left the interview room. Ruiz testified that the entire exchange lasted less than one minute; Weber believed it took about five minutes. When Weber returned to the room, he reshuffled the eight photos and again displayed them to Womble sequentially. This time, when Womble saw defendant's photo, he slammed his hand on the table and exclaimed, "[t]hat's the mother [- - - - -] there." From start to finish, the entire process took fifteen minutes.

Womble did not recant his identification, but during the *Wade* hearing he testified that he felt as though Detective Weber was "nudging" him to choose defendant's photo, and "that there was pressure" to make a choice.

After hearing the testimony, the trial court applied the two-part *Manson/Madison* test to evaluate the admissibility of the eyewitness identification. *See Manson, supra,* 432 *U.S.* at 114, 97 *S.Ct.* at 2253, 53 *L.Ed.*2d at 154; *Madison, supra,* 109 *N.J.* at 232–33, 536 *A.*2d 254. The test requires courts to determine first if police identification procedures were impermissibly suggestive; if so, courts then weigh five reliability factors to decide if the identification evidence is nonetheless admissible. *See Manson, supra,* 432 *U.S.* at 114, 97 *S.Ct.* at 2253, 53 *L.Ed.*2d at 154; *Madison, supra,* 109 *N.J.* at 232–33, 536 *A.*2d 254.

The trial court first found that the photo display itself was "a fair makeup." Under the totality of the circumstances, the judge concluded that the photo identification was reliable. The court found that there was "nothing in this case that was improper, and certainly nothing that was so suggestive as to result in a substantial likelihood of misidentification at all." The court also noted that Womble displayed no doubts about identifying defendant Henderson, that he had the opportunity to view defendant at the crime scene, and that Womble fixed his attention on defendant "because he had a gun on him."

C. Trial

The following facts—relevant to Womble's identification of defendant—were adduced at trial after the court determined that the identification was admissible: Womble smoked two bags of crack cocaine with his girlfriend in the hours before the shooting; the two also consumed one bottle of champagne and one bottle of wine; the lighting was "pretty dark" in the hallway where Womble and defendant interacted; defendant shoved Womble during the incident; and Womble remembered looking at the gun pointed at his chest. Womble also admitted smoking about two bags of crack cocaine each day from the time of the shooting until speaking with police ten days later.

At trial, Womble elaborated on his state of mind during the identification procedure. He testified that when he first looked at the photo array, he did not see anyone he recognized. As he explained, "[m]y mind was drawing a blank . . . so I just started eliminating photos." To make a final identification, Womble said that he "really had to search deep." He was nonetheless "sure" of the identification.

Womble had no difficulty identifying defendant at trial eighteen months later. From the witness stand, Womble agreed that he had no doubt that defendant—the man in the courtroom wearing "the white dress shirt"—"is the man who held [him] at bay with a gun to [his] chest."

Womble also testified that he discarded a shell casing from the shooting at an intersection five or six blocks from the apartment; he helped the police retrieve the casing ten days later. No guns

or other physical evidence were introduced linking defendant to the casing or the crime scene.

Neither Clark nor defendant testified at trial. The primary evidence against defendant, thus, was Womble's identification and Detective MacNair's testimony about defendant's post-arrest statement.[2]

At the close of trial on July 20, 2004, the court relied on the existing model jury charge on eyewitness identification and instructed the jury as follows:

> [Y]ou should consider the observations and perceptions on which the identification is based, and Womble's ability to make those observations and perceptions. If you determine that his out-of-court identification is not reliable, you may still consider Womble's in-court identification of Gregory Clark and Larry Henderson if you find that to be reliable. However, unless the identification here in court resulted from Womble's observations or perceptions of a perpetrator during the commission of an offense rather than being the product of an impression gained at an out-of-court identification procedure such as a photo lineup, it should be afforded no weight. The ultimate issues of the trustworthiness of both in-court and out-of-court identifications are for you, the jury to decide.
>
> To decide whether the identification testimony is sufficiently reliable evidence ... you may consider the following factors:
>
> First of all, Womble's opportunity to view the person or persons who allegedly committed the offense at the time of the offense; second, Womble's degree of attention on the alleged perpetrator when he allegedly observed the crime being committed; third, the accuracy of any prior description of the perpetrator given [b]y Womble; fourth, you should consider the fact that in Womble's sworn taped statement of January 11th, 2003 to the police ..., Womble did not identify anyone as the person or persons involved in the shooting of Rodney Harper ....
>
> Next, you should consider the degree of certainty, if any, expressed by Womble in making the identification.... [3]

[2] The prosecution played a tape of Clark's statement at trial as well. It placed Henderson at the apartment but largely exculpated him. According to the record, the parties acknowledged that references in the statement to a co-defendant, namely Henderson, would have to be redacted under *Bruton v. United States*, 391 *U.S.* 123, 88 *S.Ct.* 1620, 20 *L.Ed.*2d 476 (1968). Defense counsel did not seek redaction, though, specifically because the court had admitted the photo lineup and because of the tape's exculpatory nature.

[3] After defendant's conviction, this Court decided *State v. Romero*, 191 *N.J.* 59, 76, 922 *A.*2d 693 (2007), which held that jurors are to be warned that "a witness's level of confidence, standing alone, may not be an indication of the reliability of the identification."

> You should also consider the length of time between Womble's observation of the alleged offense and his identification .... You should consider any discrepancies or inconsistencies between identifications ....
>
> Next, the circumstances under which any out-of-court identification was made including in this case the evidence that during the showing to him of eight photos by Detective Weber he did not identify Larry Henderson when he first looked at them and later identified Larry Henderson from one of those photos.
>
> .... You may also consider any other factor based on the evidence or lack of evidence in the case which you consider relevant to your determination whether the identification made by Womble is reliable or not.

Defendant did not object to the charge or ask for any additional instructions related to the identification evidence presented at trial.

On July 20, 2004, the jury acquitted defendant of murder and aggravated manslaughter, and convicted him of reckless manslaughter, *N.J.S.A.* 2C:11–4(b)(1), aggravated assault, and two weapons charges. In a bifurcated trial the next day, the jury convicted defendant of the remaining firearms offense: possession by a previously convicted person. The court sentenced him to an aggregate eleven-year term of imprisonment, with a period of parole ineligibility of almost six years under the No Early Release Act, *N.J.S.A.* 2C:43–7.2. Defendant appealed his conviction and sentence.

D. Appellate Division

The Appellate Division presumed that the identification procedure in this case was impermissibly suggestive under the first prong of the *Manson/Madison* test. *State v. Henderson*, 397 *N.J.Super.* 398, 414, 937 *A.*2d 988 (App.Div.2008). The court reversed and remanded for a new *Wade* hearing to determine whether the identification was nonetheless reliable under the test's second prong. *Id.* at 400, 414–15, 937 *A.*2d 988.

The panel anchored its finding to what it considered to be a material breach of the Attorney General Guidelines. *Id.* at 412, 937 *A.*2d 988. Among other things, the Guidelines require that

" 'whenever practical' the person conducting the photographic identification procedure 'should be someone other than the primary investigator assigned to the case.' " *Id.* at 411, 937 *A.*2d 988 (citing *State v. Herrera*, 187 *N.J.* 493, 516, 902 *A.*2d 177 (2006)). The panel specifically found that the investigating officers, MacNair and Ruiz, "consciously and deliberately intruded into the process for the purpose of assisting or influencing Womble's identification of defendant." *Id.* at 414, 937 *A.*2d 988. The officers' behavior, the court explained, "certainly violate[d] the spirit of the Guidelines." Id. at 412, 937 *A.*2d 988. In such circumstances, the panel "conclude[d] that a presumption of impermissible suggestiveness must be imposed, and a new *Wade* hearing conducted." *Id.* at 400, 937 *A.*2d 988.

E. Certification and Remand Order

We granted the State's petition for certification, 195 *N.J.* 521, 950 *A.*2d 907, 908 (2008), and also granted leave to appear as amicus curiae to the Association of Criminal Defense Lawyers of New Jersey (ACDL) and the Innocence Project (collectively "amici"). In their briefs and at oral argument, the parties and amici raised questions about possible shortcomings in the *Manson/Madison* test in light of recent scientific research.

In an unpublished Order dated February 26, 2009, attached as Appendix A, we "concluded that an inadequate factual record exist[ed] on which [to] test the current validity of our state law standards on the admissibility of eyewitness identification." App. A at *3. We therefore remanded the matter

> summarily to the trial court for a plenary hearing to consider and decide whether the assumptions and other factors reflected in the two-part *Manson/Madison* test, as well as the five factors outlined in those cases to determine reliability, remain valid and appropriate in light of recent scientific and other evidence.
>
> [*Ibid.*]

We appointed the Honorable Geoffrey Gaulkin, P.J.A.D. (retired and temporarily assigned on recall) to preside at the remand hearing as a Special Master.

Pursuant to the Order, the following parties participated in the remand hearing: the Attorney General, the Public Defender (representing defendant [4]), and amici.

The parties and amici collectively produced more than 360 exhibits, which included more than 200 published scientific studies on human memory and eyewitness identification. During the ten-day remand hearing, the Special Master heard testimony from seven expert witnesses. Three of them—Drs. Gary Wells, Steven Penrod, and Roy Malpass—testified about the state of scientific research in the field of eyewitness identification.

Dr. Wells, who was called as a witness by the Innocence Project, holds a Ph.D. in Experimental Social Psychology and serves as a Professor of Psychology at Iowa State University. Since 1977, Dr. Wells has published more than 100 articles on eyewitness identification research. He assisted the Attorney General's Office in connection with the formulation of the Attorney General Guidelines.

Dr. Penrod, who was called as a witness by defendant, is a Distinguished Professor of Psychology at John Jay College of Criminal Justice in New York. He holds a degree in law and a Ph.D. in Pyschology. Dr. Penrod has also published extensively in the area of eyewitness identification and has served on the editorial board of numerous psychology journals.

Dr. Malpass, who was called by the State, is also widely published. He holds a Ph.D., and his academic career spans more than four decades. Dr. Malpass is currently a Professor of Psychology and Criminal Justice at the University of Texas, El Paso, where he runs the university's Eyewitness Identification Research Lab.

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[4] Defendant was still in prison on September 17, 2009, when the remand proceedings began. Through counsel, he waived his right to appear. Defendant was paroled on November 30, 2009, after which he again waived his appearance.

The parties and amici also presented the testimony of three law professors: James Doyle, Jules Epstein, and Dr. John Monahan. The professors discussed the intersection of eyewitness identification research and the legal system.

Dr. Monahan and Professor Doyle were called as witnesses by the Innocence Project. Dr. Monahan has a Ph.D. in Clinical Psychology, is a Distinguished Professor of Law at the University of Virginia, and holds dual appointments in the Departments of Psychology and Psychiatric and Neurobehavioral Sciences. He coauthored the casebook *Social Science in Law* (7th ed.2010), and has published extensively on that topic. Professor Doyle is Director of the Center for Modern Forensic Practice at John Jay College of Criminal Justice. In 1987, he co-authored a treatise titled *Eyewitness Testimony: Civil and Criminal*, which he regularly updates.

Defendant presented Professor Epstein as a witness. He is an Associate Professor of Law at Widener University School of Law, who has spent more than a decade representing criminal defendants in Philadelphia. He, too, has written extensively on eyewitness identification.

The State also called James Gannon to testify. From 1986 to 2007, he worked with the Morris County Prosecutor's Office, ultimately serving as Deputy Chief of Investigations. During his career, he investigated approximately 120 homicides. He continues to train law enforcement personnel locally and internationally. Gannon testified about practical constraints police officers sometimes face in conducting investigations.

III. Proof of Misidentifications

In this case, the parties heavily dispute the admissibility and reliability of Womble's eyewitness identification of defendant. We therefore begin with some important, general observations about eyewitness identification evidence, which are derived mostly from the remand hearing as well as prior case law.

In 2006, this Court observed that eyewitness "[m]isidentification is widely recognized as the single greatest cause of wrongful convictions in this country." *State v. Delgado*, 188 *N.J.* 48, 60, 902 *A.*2d 888 (2006) (citations omitted); *see also Romero, supra*, 191 *N.J.* at 73–74, 922 *A.*2d 693 ("Some have pronounced that mistaken identifications 'present what is conceivably the greatest single threat to the achievement of our ideal that no innocent man shall be punished.' " (citation omitted)). That same year, the International Association of Chiefs of Police published training guidelines in which it concluded that "[o]f all investigative procedures employed by police in criminal cases, probably none is less reliable than the eyewitness identification. Erroneous identifications create more injustice and cause more suffering to innocent persons than perhaps any other aspect of police work." Int'l Ass'n of Chiefs of Police, *Training Key No. 600, Eyewitness Identification* 5 (2006).

Substantial evidence in the record supports those statements. Nationwide, "more than seventy-five percent of convictions overturned due to DNA evidence involved eyewitness misidentification." *Romero, supra*, 191 *N.J.* at 74, 922 *A.*2d 693 (citing Innocence Project report); Brandon L. Garrett, *Convicting the Innocent: Where Criminal Prosecutions Go Wrong* 8–9, 279 (2011)[5] (finding same in 190 of first 250 DNA exoneration cases). In half of the cases, eyewitness testimony was not corroborated by confessions, forensic science, or informants. *See* The Innocence Project, *Understand the Causes: Eyewitness Misidentification*, http://www.innocenceproject.org/understand/Eyewitness–Misidentification.php (last visited August 16, 2011). Thirty-six percent of the defendants convicted were misidentified by more than one eyewitness. Garrett, *supra*, at 50. As we recognized four years ago, "[i]t has been estimated that

[5] This book was published after the remand hearing, and a part was submitted to the Court and addressed by the parties. The book analyzes the first 250 DNA exoneration cases in the United States, and its author reviewed the full trial record in most of those matters. *See* Garrett, *supra*, at 7.

approximately 7,500 of every 1.5 million annual convictions for serious offenses may be based on misidentifications." *Romero, supra*, 191 *N.J.* at 74, 922 *A.*2d 693 (citing Brian L. Cutler & Steven D. Penrod, *Mistaken Identification: The Eyewitness, Psychology, and the Law* 7 (1995)).

New Jersey is not immune. The parties noted that misidentifications factored into three of the five reported DNA exonerations in our State. In one of those cases, this Court had reversed convictions for rape and robbery because the trial court failed to instruct the jury that people may have greater difficulty in identifying members of a different race. *See State v. Cromedy*, 158 *N.J.* 112, 121–23, 132, 727 *A.*2d 457 (1999) (citing social science studies). After the decision, DNA tests led to Cromedy's exoneration.

But DNA exonerations are rare. To determine whether statistics from such cases reflect system-wide flaws, police departments have allowed social scientists to analyze case files and observe and record data from real-world identification procedures.

Four such studies—two from Sacramento, California and two from London, England—produced data from thousands of actual eyewitness identifications. *See* Bruce W. Behrman & Sherrie L. Davey, *Eyewitness Identification in Actual Criminal Cases: An Archival Analysis*, 25 *Law & Hum. Behav.* 475 (2001) (compiling records from fifty-eight live police lineups from area around Sacramento); Bruce W. Behrman & Regina E. Richards, *Suspect/Foil Identification in Actual Crimes and in the Laboratory: A Reality Monitoring Analysis*, 29 *Law & Hum. Behav.* 279 (2005) (assessing 461 photo and live lineup records from same area); Tim Valentine et al., *Characteristics of Eyewitness Identification that Predict the Outcome of Real Lineups*, 17 *Applied Cognitive Psychol.* 969 (2003) (analyzing 584 lineup records from police stations in and around London); Daniel B. Wright & Anne T. McDaid, *Comparing System and Estimator Variables Using Data from Real Line–Ups*, 10 *Applied Cognitive Psychol.* 75 (1996) (evaluating 1,561 records from same area).

For the larger London study, 39% of eyewitnesses identified the suspect, 20% identified a filler, and 41% made no identification. *See* Wright & McDaid, *supra*, at 77. Thus, about one-third of eyewitnesses who made an identification (20 of 59) in real police investigations wrongly selected an innocent filler. The results were comparable for the Valentine study. *See* Valentine, *supra*, at 974. Across both Sacramento studies, 51% of eyewitnesses identified the suspect, 16% identified a filler, and 33% identified no one. *See* Behrman & Davey, *supra*, at 482; Behrman & Richards, *supra*, at 285. In other words, nearly 24% of those who made an identification (16 of 67) mistakenly identified an innocent filler.

Although the studies revealed alarming rates at which witnesses chose innocent fillers out of police lineups, the data cannot identify how many of the suspects actually selected were the real culprits. *See* Behrman & Davey, *supra*, at 478. Researchers have conducted field experiments to try to answer that more elusive question: how often are innocent suspects wrongly identified?

Three experiments targeted unassuming convenience store clerks and one focused on bank tellers. *See* John C. Brigham et al., *Accuracy of Eyewitness Identifications in a Field Setting*, 42 *J. Personality & Soc. Psychol.* 673 (1982); Carol Krafka & Steven Penrod, *Reinstatement of Context in a Field Experiment on Eyewitness Identification*, 49 *J. Personality & Soc. Psychol.* 58 (1985); Stephanie J. Platz & Harmon M. Hosch, *Cross–Racial/Ethnic Eyewitness Identification: A Field Study*, 18 *J. Applied Soc. Psychol.* 972 (1988); Melissa A. Pigott et al., *A Field Study on the Relationship Between Quality of Eyewitnesses' Descriptions and Identification Accuracy*, 17 *J. Police Sci. & Admin.* 84 (1990) (bank teller study).

Each study unfolded with different variations of the following approach: a customer walked into a store and tried to buy a can of soda with a $10 traveler's check; he produced two pieces of identification and chatted with the clerk; and the encounter lasted about three minutes. *See, e.g.*, Krafka & Penrod, *supra*, at 62. Two to twenty-four hours later, a different person entered the

same store and asked the same clerk to identify the man with the traveler's check; the clerk was told that the suspect might not be among the six photos presented; and no details of the investigation were given. *Ibid.* Only after making a choice was the clerk told that he or she had participated in an experiment. *Id.* at 63.

Across the four experiments, researchers gathered data from more than 500 identifications. Dr. Penrod testified that on average, 42% of clerks made correct identifications, 41% identified photographs of innocent fillers, and 17% chose to identify no one. *See* Brigham et al., *supra*, at 677; Krafka & Penrod, *supra*, at 64–65; Pigott et al., *supra*, at 86–87; Platz & Hosch, *supra*, at 978. Those numbers, like the results from the Sacramento and London studies, reveal high levels of misidentifications.

In two of the studies, researchers showed some clerks target-absent arrays—lineups that purposely excluded the perpetrator and contained only fillers. *See* Krafka & Penrod, *supra*, at 64–65; Pigott et al., *supra*, at 86. In those experiments, Dr. Penrod testified that 64% of eyewitnesses made no identification, but 36% picked a foil. *See* Krafka & Penrod, *supra*, at 64; Pigott et al., *supra*, at 86. Those field experiments suggest that when the true perpetrator is not in the lineup, eyewitnesses may nonetheless select an innocent suspect more than one-third of the time.

Any one of the above studies, standing alone, reveals a troubling lack of reliability in eyewitness identifications.

We accept that eyewitnesses generally act in good faith. Most misidentifications stem from the fact that human memory is malleable; they are not the result of malice. As discussed below, an array of variables can affect and dilute eyewitness memory.

Along with those variables, a concept called relative judgment, which the Special Master and the experts discussed, helps explain how people make identifications and raises concerns about reliability. Under typical lineup conditions, eyewitnesses are asked to identify a suspect from a group of similar-looking people. "[R]elative judgment refers to the fact that the witness seems to be

choosing the lineup member who most resembles the witnesses' memory *relative* to other lineup members." Gary L. Wells, *The Psychology of Lineup Identifications*, 14 *J. Applied Soc. Psychol.* 89, 92 (1984) (emphasis in original). As a result, if the actual perpetrator is not in a lineup, people may be inclined to choose the best look-alike. *Id.* at 93. Psychologists have noted that "[t]his is not a surprising proposition." Gary L. Wells, *What Do We Know About Eyewitness Identification?*, 48 *Am. Psychologist* 553, 560 (1993). Also not surprising is that it enhances the risk of misidentification. *Ibid.*

In one relative-judgment experiment, 200 witnesses were shown a staged crime. *Id.* at 561. Half of the witnesses were then shown a lineup that included the perpetrator and five fillers; the other half looked at a lineup with fillers only. *Ibid.* All of the witnesses were warned that the culprit might not be in the array and were given the option to choose no one. *Ibid.* From the first group, 54% made a correct identification and 21% believed, incorrectly, that the perpetrator was not in the array. *Ibid.* If witnesses rely on pure memory instead of relative judgment, the accurate identifications from the first group should have translated roughly into 54% making no choice in the second, target-absent group. Instead, only 32% of witnesses from the second group said that the culprit was not present, while 68% misidentified a filler. *Ibid.* Consistent with the concept of relative judgment, witnesses chose other fillers who looked more like the perpetrator to them, instead of making no identification. *Ibid.*

Relative judgment touches the core of what makes the question of eyewitness identification so challenging. Without persuasive extrinsic evidence, one cannot know for certain which identifications are accurate and which are false—which are the product of reliable memories and which are distorted by one of a number of factors.

Nearly four decades ago, Chief Judge Bazelon remarked skeptically that in the face of such uncertainty, "we have bravely assumed that the jury is capable of evaluating [eyewitness] relia-

bility." *United States v. Brown*, 461 F.2d 134, 145 n. 1 (D.C.Cir. 1972) (Bazelon, C.J., concurring & dissenting). Five years later, in *Manson, supra*, the Supreme Court noted that in most cases "[w]e are content to rely upon the good sense and judgment of American juries" because eyewitness identification "evidence with some element of untrustworthiness is customary grist for the jury mill." 432 *U.S.* at 116, 97 *S.Ct.* at 2254, 53 *L.Ed.*2d at 155. Justice Marshall, in dissent, expressed a contrary view. *See id.* at 120, 97 *S.Ct.* at 2255–56, 53 *L.Ed.*2d at 157 (Marshall, J., dissenting). A "fundamental fact of judicial experience," Justice Marshall wrote, is that jurors "unfortunately are often unduly receptive to [eyewitness identification] evidence." *Ibid.*

We presume that jurors are able to detect liars from truth tellers. But as scholars have cautioned, most eyewitnesses think they are telling the truth even when their testimony is inaccurate, and "[b]ecause the eyewitness is testifying honestly (i.e., sincerely), he or she will not display the demeanor of the dishonest or biased witness." *See* Jules Epstein, *The Great Engine that Couldn't: Science, Mistaken Identity, and the Limits of Cross–Examination*, 36 *Stetson L.Rev.* 727, 772 (2007). Instead, some mistaken eyewitnesses, at least by the time they testify at trial, exude supreme confidence in their identifications.

As discussed below, lab studies have shown that eyewitness confidence can be influenced by factors unrelated to a witness' actual memory of a relevant event. *See* Amy Bradfield Douglass & Nancy Steblay, *Memory Distortion in Eyewitnesses: A Meta–Analysis of the Post-identification Feedback Effect*, 20 *Applied Cognitive Psychol.* 859, 864–65 (2006) (addressing effects of confirmatory feedback on confidence). Indeed, this Court has already acknowledged that accuracy and confidence "may not be related to one another at all." *See Romero, supra*, 191 *N.J.* at 75, 922 *A.*2d 693 (citation omitted).

DNA exoneration cases buttress the lab results. Almost all of the eyewitnesses in those cases testified at trial that they were positive they had identified the right person. *See* Garrett, *supra*,

63–64 (noting also that in 57% of the trials, "the witnesses had earlier not been certain at all").

In the face of those proofs, we are mindful of the observation that "there is almost *nothing more convincing* [to a jury] than a live human being who takes the stand, points a finger at the defendant, and says 'That's the one!' " *Watkins v. Sowders*, 449 *U.S.* 341, 352, 101 *S.Ct.* 654, 661, 66 *L.Ed.*2d 549, 558–59 (Brennan, J., dissenting) (quoting Elizabeth Loftus, *Eyewitness Testimony* 19 (1979)) (emphasis in original).

The State challenges the above concepts in various ways: it argues that some studies evaluating real police files and investigations are unreliable because it is unclear whether the witnesses were given proper pre-lineup warnings, *see, e.g.*, Valentine et al., *supra*; that misidentification statistics gleaned from more than 200 nationwide DNA exonerations are insufficient to conclude that a serious problem exists; that the only DNA exonerations relevant to this case are the five cases from New Jersey, which all predated the Attorney General Guidelines; that exculpatory DNA evidence does not necessarily prove a defendant is innocent; and that DNA exonerations only remind us that the criminal justice system is imperfect.

That broad-brush approach, however, glosses over the consistency and importance of the comprehensive scientific research that is discussed in the record. Recent studies—ranging from analyses of actual police lineups, to laboratory experiments, to DNA exonerations—prove that the possibility of mistaken identification is real, and the consequences severe.

IV. Current Legal Framework

The current standards for determining the admissibility of eyewitness identification evidence derive from the principles the United States Supreme Court set forth in *Manson* in 1977. *See Manson, supra*, 432 *U.S.* at 114, 97 *S.Ct.* at 2253, 53 *L.Ed.*2d at 154. New Jersey formally adopted *Manson's* framework in *Madison, supra*, 109 *N.J.* at 232–33, 536 *A.*2d 254.

Madison succinctly outlined *Manson*'s two-step test as follows:

> [A] court must first decide whether the procedure in question was in fact impermissibly suggestive. If the court does find the procedure impermissibly suggestive, it must then decide whether the objectionable procedure resulted in a "very substantial likelihood of irreparable misidentification." In carrying out the second part of the analysis, the court will focus on the reliability of the identification. If the court finds that the identification is reliable despite the impermissibly suggestive nature of the procedure, the identification may be admitted into evidence.
>
> [*Madison, supra*, 109 *N.J.* at 232, 536 *A.*2d 254 (citations omitted).]

[1] As the Supreme Court explained, "reliability is the linchpin in determining the admissibility of identification testimony." *Manson, supra*, 432 *U.S.* at 114, 97 *S.Ct.* at 2253, 53 *L.Ed.*2d at 154. To assess reliability, courts must consider five factors adopted from *Neil v. Biggers:* (1) the "opportunity of the witness to view the criminal at the time of the crime"; (2) "the witness's degree of attention"; (3) "the accuracy of his prior description of the criminal"; (4) "the level of certainty demonstrated at the time of the confrontation"; and (5) "the time between the crime and the confrontation." *Madison, supra*, 109 *N.J.* at 239–40, 536 *A.*2d 254 (quoting *Manson, supra*, 432 *U.S.* at 114, 97 *S.Ct.* at 2253, 53 *L.Ed.*2d at 154 (citing *Neil v. Biggers*, 409 *U.S.* 188, 199, 93 *S.Ct.* 375, 382, 34 *L.Ed.*2d 401, 411 (1972))) (internal quotation marks omitted). Those factors are to be weighed against "the corrupting effect of the suggestive identification itself." *Manson, supra*, 432 *U.S.* at 114, 97 *S.Ct.* at 2253, 53 *L.Ed.*2d at 154.

Procedurally, a defendant must first "proffer . . . some evidence of impermissible suggestiveness" to be entitled to a *Wade* hearing. *State v. Rodriquez*, 264 *N.J.Super.* 261, 269, 624 *A.*2d 605 (App. Div.1993) (citations omitted), *aff'd o.b.*, 135 *N.J.* 3, 637 *A.*2d 914 (1994); *State v. Ortiz*, 203 *N.J.Super.* 518, 522, 497 *A.*2d 552 (App.Div.1985). At the hearing, if the court decides the procedure "was in fact impermissibly suggestive," it then considers the reliability factors. *See Madison, supra*, 109 *N.J.* at 232, 536 *A.*2d 254. The State then "has the burden of proving by clear and convincing evidence that the identification[ ] . . . had a source independent of the police-conducted identification procedures." *Id.* at 245, 536 *A.*2d 254 (citing *Wade, supra*, 388 *U.S.* at 240, 87 *S.Ct.* at 1939, 18 *L.Ed.*2d at 1164) (additional citation omitted). Overall, the reliability determination is to be made from the totality of the circumstances. *Id.* at 233, 87 *S.Ct.* 1926 (citing *Neil v. Biggers, supra*, 409 *U.S.* at 199, 93 *S.Ct.* at 382, 34 *L.Ed.*2d at 411).

Manson, supra, intended to address several concerns: problems with the reliability of eyewitness identification; deterrence; and the effect on the administration of justice. 432 *U.S.* at 111–13, 97 *S.Ct.* at 2251–52, 53 *L.Ed.*2d at 152–53. Underlying *Manson's* approach are certain assumptions: that jurors can detect untrustworthy eyewitnesses, *see id.* at 116, 97 *S.Ct.* at 2254, 53 *L.Ed.*2d at 155; and that the test would deter suggestive police practices, *see id.* at 112, 97 *S.Ct.* at 2252, 53 *L.Ed.*2d at 152. As to the latter point, the Court adopted a totality approach over a per se rule of exclusion to avoid "keep[ing] evidence from the jury that is reliable and relevant." *Ibid.*

Manson and *Madison* provide good examples for how the two-pronged test is applied. In *Manson, supra*, an undercover narcotics officer, Trooper Glover, observed a defendant during a drug buy. 432 *U.S.* at 100–01, 97 *S.Ct.* at 2245–46, 53 *L.Ed.*2d at 145–46. Glover did not know the person and described him to backup officers after the transaction. Based on the description, one of the officers left a photo of the defendant on Glover's desk. Glover later identified the defendant from the single photo. *Id.* at 101, 97 *S.Ct.* at 2246, 53 *L.Ed.*2d at 145–46.

Although the Court recognized that "identifications arising from single-photograph displays may be viewed in general with suspicion," it found that the corrupting effect of the challenged identification did not outweigh Glover's ability to make an accurate identification. *Id.* at 116, 97 *S.Ct.* at 2254, 53 *L.Ed.*2d at 155 (citation omitted). After assessing each of the five reliability factors, the Court concluded that the identification was admissible because it could not "say that under all the circumstances of this case there is 'a very substantial likelihood of irreparable misidenti-

fication.'" *Id.* at 116, 97 *S.Ct.* at 2254, 53 *L.Ed.*2d at 155 (citing *Simmons v. United States,* 390 *U.S.* 377, 384, 88 *S.Ct.* 967, 971, 19 *L.Ed.*2d 1247, 1253 (1968)). "Short of that," the Court noted, the "evidence is for the jury to weigh." *Ibid.*

This Court applied the same test in *Madison.* Two months after an armed robbery, a detective administering a photo lineup showed a victim twenty-four black-and-white photographs containing at least one photo of the defendant. *Madison, supra,* 109 *N.J.* at 225, 536 *A.*2d 254. Next, the detective showed the victim an additional thirty-eight color photographs, "thirteen or fourteen of which depicted defendant as the center of attention at a birthday celebration held in his honor." *Id.* at 235, 536 *A.*2d 254.

The Court found the identification procedure "impermissibly suggestive" based on "the sheer repetition of defendant's picture." *Id.* at 234, 536 A.2d 254. It then remanded to the trial court to evaluate, under the second prong, "whether the identification[ ] . . . had an independent source" that could outweigh the substantial suggestiveness of the process. *See id.* at 245, 536 *A.*2d 254.

Since *Madison,* this Court, on occasion, has refined the *Manson/Madison* framework. In *Cromedy, supra,* the Court examined numerous social science studies showing that identifications are less reliable when the witness and perpetrator are of different races. 158 *N.J.* at 121, 727 *A.*2d 457. In response, the Court held that jury instructions on the reliability of cross-racial identifications are necessary when "identification is a critical issue in the case" and there is no independent evidence corroborating the identification. *Id.* at 132, 727 *A.*2d 457.

More recently in *Romero, supra,* the Court recognized that "[j]urors likely will believe eyewitness testimony 'when it is offered with a high level of confidence, even though the accuracy of an eyewitness and the confidence of that witness may not be related to one another at all.'" 191 *N.J.* at 75, 922 A.2d 693 (quoting *Watkins, supra,* 449 *U.S.* at 352, 101 *S.Ct.* at 661, 66 *L.Ed.*2d at 558 (Brennan, J., dissenting)). The Court cited "social science research noting the fallibility of eyewitness identifications"

and directed that juries be instructed as follows in eyewitness identification cases:

> Although nothing may appear more convincing than a witness's categorical identification of a perpetrator, you must critically analyze such testimony. Such identifications, even if made in good faith, may be mistaken. Therefore, when analyzing such testimony, be advised that a witness's level of confidence, standing alone, may not be an indication of the reliability of the identification.
>
> [*Id.* at 75–76, 922 *A.*2d 693.]

In *Delgado, supra,* the Court directed that "law enforcement officers make a written record detailing [all] out-of-court identification procedure[s], including the place where the procedure was conducted, the dialogue between the witness and the interlocutor, and the results." 188 *N.J.* at 63, 902 *A.*2d 888. *See also Herrera, supra,* 187 *N.J.* at 504, 902 *A.*2d 177 (finding showup identification procedures inherently suggestive).

Despite those important, incremental changes, we have repeatedly used the *Manson/Madison* test to determine the admissibility of eyewitness identification evidence. As we noted in *Herrera,* "[u]ntil we are convinced that a different approach is required after a proper record has been made in the trial court, we continue to follow the [*Manson/Madison*] approach." *Ibid.; see also State v. Adams,* 194 *N.J.* 186, 201, 943 *A.*2d 851 (2008).

That record is now before us. It enables us to consider whether the *Manson/Madison* framework remains valid and appropriate or if a different approach is required. To make that determination, we first look to the scope of the scientific evidence since 1977. We then examine its content.

V. Scope of Scientific Research

Virtually all of the scientific evidence considered on remand emerged after *Manson.* In fact, the earliest study the State submitted is from 1981, and only a handful of the more than 200 scientific articles in the record pre-date 1970.

During the 1970s, when the Supreme Court decided *Manson,* researchers conducted some experiments on the malleability of human memory. But according to expert testimony, that decade

produced only four published articles in psychology literature containing the words "eyewitness" and "identity" in their abstracts. By contrast, the Special Master estimated that more than two thousand studies related to eyewitness identification have been published in the past thirty years.

Some recent studies have successfully gathered real-world data from actual police identification procedures. *See, e.g.,* Behrman & Davey, *supra;* Valentine et al., *supra.* But most eyewitness identification research is conducted through controlled lab experiments. Unlike analyses of real-world data, experimental studies allow researchers to control and isolate variables. If an experiment is designed well, scientists can then draw relevant conclusions from different conditions.

There have been two principal methods of conducting eyewitness lab research. In some experiments, eyewitnesses have been shown staged events without knowing they were witnessing something artificial. *See, e.g.,* Krafka & Penrod, *supra.* In other studies, witnesses generally knew they were participating in an experiment from the outset. *See e.g.,* Lynn Garrioch & C.A. Elizabeth Brimacombe, *Lineup Administrators' Expectations: Their Impact on Eyewitness Confidence,* 25 *Law & Hum. Behav.* 299 (2001). Most experiments manipulate variables, like the witness' and suspect's race, for example, and use target-present and target-absent lineups to test the effect the variable has on accuracy. (The scientific literature often uses the term "lineup" to refer to live lineups and/or photo arrays; we sometimes use the word interchangeably as well.)

Authoritative researchers generally present the results of their experiments in peer-reviewed psychology journals. "The peer review process is a method of quality control that ensures the validity and reliability of experimental research." Roy S. Malpass et al., *The Need for Expert Psychological Testimony on Eyewitness Identification,* in *Expert Testimony on the Psychology of Eyewitness Identification* 3, 14 (Brian L. Cutler ed., 2009). The process is designed to ensure that studies "have passed a rigorous

test and are generally considered worthy of consideration by the greater scientific community" before they are published. *Ibid.* Of the hundreds of laboratory studies in the record, nearly all have been published in prominent, peer-reviewed journals.

Although one lab experiment can produce intriguing results, its data set may be small. For example, if only twenty people participated in an experiment, it may be difficult to generalize the results beyond the individual study. Meta-analysis aims to solve that problem.

"A meta-analysis is a synthesis of all obtainable data collected in a specified topical area. The benefits of a meta-analysis are that greater statistical power can be obtained by combining data from many studies." *Id.* at 15. The more consistent the conclusions from aggregated data, the greater confidence one can have in those conclusions. More than twenty-five meta-analyses were presented at the hearing.

Despite its volume and breadth, the record developed on remand has its limitations. Results from meta-analysis, for example, still come mostly from controlled experiments. *See State v. Marquez,* 291 *Conn.* 122, 967 *A.*2d 56, 75 (2009) (noting lack of "real-world data" in certain research areas (citation omitted)).[6] To determine whether such experiments reliably predict how people behave in the real world, researchers have tried to compare results across different types of studies.

Dr. Penrod presented data from a meta-analysis comparing studies in which witnesses knew they were participating in experi-

[6] In *Marquez, supra,* the Connecticut Supreme Court concluded that "scientific literature ... with respect to eyewitness identification procedures is far from universal or even well established, and that the research is in great flux." 967 *A.*2d at 77. *Marquez* considered six scientific articles and reports in reaching that conclusion, *id.* at 72–78, including an Illinois field study that has been strongly criticized, *see id.* at 75 & n. 24; *see also* Daniel L. Schacter et al., *Policy Forum: Studying Eyewitness Investigations in the Field,* 32 *Law & Hum. Behav.* 3 (2008). The more extensive record presented and tested on remand provides a stronger basis for an assessment of eyewitness identification research.

ments and those in which witnesses observed what they thought were real crimes and were not told otherwise until after making an identification. *See* Ralph Norman Haber & Lyn Haber, *A Meta–Analysis of Research on Eyewitness Lineup Identification Accuracy,* Paper presented at the Annual Convention of the Psychonomics Society, Orlando, Florida 8–9 (Nov. 16, 2001). The analysis revealed that identification statistics from across the studies were remarkably consistent: in both sets of studies, 24% of witnesses identified fillers. *See id.* at 9 (also finding 34% filler identification rates when witnesses observed slideshows or videos of crimes). Those statistics are similar to data from real cases. As discussed in section III above, in police investigations in Sacramento and London, roughly 20% of eyewitnesses identified fillers. *See* Behrman & Davey, *supra,* at 482; Behrman & Richards, *supra,* at 285; Valentine et al., *supra,* at 974; Wright & McDaid, *supra,* at 77. Thus, although lab and field experiments may be imperfect proxies for real-world conditions, certain data they have produced are relevant and persuasive.

Critics, including the State, point out that most experiments occur on college campuses and use college students as witnesses in a way that does not replicate real life. Expert testimony, though, highlighted that college students are among the best eyewitnesses in light of their general health, visual acuity, recall, and alertness. But real eyewitnesses, the critics contend, act more carefully when they identify real suspects. As the Special Master noted, it is hard to credit that argument in light of archival studies and the exoneration cases. Even with the best of intentions, misidentifications occur in the real world.

A similar criticism suggests that lab experiments cannot replicate the intensity and stress that crime victims experience, which leaves stronger memory traces. But as discussed below, studies have shown consistently that high degrees of stress actually impair the ability to remember. *See, e.g.,* Kenneth A. Deffenbacher et al., *A Meta–Analytic Review of the Effects of High Stress on Eyewitness Memory,* 28 *Law & Hum. Behav.* 687, 687, 699 (2004).

Finally, the State argues that lab studies are designed so that about half of the participants will not be able to make an identification; a "base rate" of 50% is commonly used with half of the witnesses viewing a lineup with the suspect and half looking at fillers only. The State argues those results cannot be generalized to the real world, where the actual base rate may be much higher.

As Dr. Wells testified, statistical analysis permits researchers to estimate the results under any base rate. That said, in reality, we simply cannot know how often the suspect in an array is the actual perpetrator. But not knowing real-world base rates does not render experimental studies meaningless.

To be sure, many questions about memory and the psychology of eyewitness identifications remain unanswered. And eyewitness identification research remains probabilistic, meaning that science cannot say whether an identification in an actual case is accurate or not. Instead, science has sought to answer, in the aggregate, which identification procedures and external variables are tied to an increased risk of misidentification.

Mindful of those limitations, we next examine the research on human memory.

VI. How Memory Works

Research contained in the record has refuted the notion that memory is like a video recording, and that a witness need only replay the tape to remember what happened. Human memory is far more complex. The parties agree with the Special Master's finding that memory is a constructive, dynamic, and selective process.

The process of remembering consists of three stages: acquisition—"the perception of the original event"; retention—"the period of time that passes between the event and the eventual recollection of a particular piece of information"; and retrieval—the "stage during which a person recalls stored information." Elizabeth F. Loftus, *Eyewitness Testimony* 21 (2d ed.1996). As the Special Master observed,

[a]t each of those stages, the information ultimately offered as "memory" can be distorted, contaminated and even falsely imagined. The witness does not perceive all that a videotape would disclose, but rather "get[s] the gist of things and constructs a "memory" on "bits of information . . . and what seems plausible." The witness does not encode all the information that a videotape does; memory rapidly and continuously decays; retained memory can be unknowingly contaminated by post-event information; [and] the witness's retrieval of stored "memory" can be impaired and distorted by a variety of factors, including suggestive interviewing and identification procedures conducted by law enforcement personnel.

[Internal citations omitted.]

Researchers in the 1970s designed a number of experiments to test how and to what extent memories can be distorted. One experiment began by showing subjects film clips of auto accidents. Elizabeth F. Loftus & John C. Palmer, *Reconstruction of Automobile Destruction: An Example of the Interaction Between Language and Memory*, 13 *J. Verbal Learning & Verbal Behav.* 585, 586 (1974). Researchers then asked test subjects to estimate the speed at which the cars traveled, and the answers differed markedly based on the question posed. On average, those asked "how fast were the cars going when they *smashed* into each other?" guessed higher speeds than subjects asked the same question with the word collided, bumped, hit, or contacted. *Ibid.* The first group estimated a median speed of 40.5 miles per hour when the cars "smashed"; the last group guessed the speed at 31.8 miles per hour when the cars "contacted." *Ibid.* Thus, a simple difference in language was able to cause a substantial change in the reconstruction of memory.

A similar study showed college students a film of a car accident and asked some of them to guess how fast the car was going "along the country road"; the rest were asked how fast the car was going when it "passed the barn" along the country road. Elizabeth F. Loftus, *Leading Questions and the Eyewitness Report*, 7 *Cognitive Psychol.* 560, 566 (1975). One week later, the same students were asked if they had seen a barn in the film. Approximately 17% of students who were originally asked the "passed the barn" question said there was a barn, and just under 3% from the other group remembered a barn. *Ibid.* In reality, there was no barn. *Ibid.*; *see also* Elizabeth F. Loftus & Jacqueline E. Pickrell, *The Formation of False Memories*, 25 *Psychiatric Annals* 720 (1995); Elizabeth F. Loftus & Guido Zanni, *Eyewitness Testimony: The Influence of the Wording of a Question*, 5 *Bull. Psychonomic Soc'y* 86 (1975).

Science has proven that memory is malleable. The body of eyewitness identification research further reveals that an array of variables can affect and dilute memory and lead to misidentifications.

Scientific literature divides those variables into two categories: system and estimator variables. System variables are factors like lineup procedures which are within the control of the criminal justice system. Gary L. Wells, *Applied Eyewitness–Testimony Research: System Variables and Estimator Variables*, 36 *J. Personality & Soc. Psychol.* 1546, 1546 (1978). Estimator variables are factors related to the witness, the perpetrator, or the event itself—like distance, lighting, or stress—over which the legal system has no control. *Ibid.*

We review each of those variables in turn. For each, we address relevant scientific evidence, the Special Master's findings, and instances where the State takes issue with those findings.

[2, 3] We summarize findings for each of those variables consistent with the proper standards for reviewing special-master reports and scientific evidence. Courts generally defer to a special master's credibility findings regarding the testimony of expert witnesses. *State v. Chun*, 194 *N.J.* 54, 96, 943 *A.*2d 114 (2008) (citing *State v. Locurto*, 157 *N.J.* 463, 471, 724 *A.*2d 234 (1999)). We evaluate a special master's factual findings

in the same manner as we would the findings and conclusions of a judge sitting as a finder of fact. We therefore accept the fact findings to the extent that they are supported by substantial credible evidence in the record, but we owe no particular deference to the legal conclusions of the Special Master.

[*Id.* at 93, 943 *A.*2d 114 (citations omitted).]

[4, 5] Scientific theories can be accepted as reliable when they are "based on a sound, adequately-founded scientific methodology involving data and information of the type reasonably relied on by

experts in the scientific field." *State v. Moore*, 188 *N.J.* 182, 206, 902 *A.*2d 1212 (2006) (quoting *Rubanick v. Witco Chem. Corp.*, 125 *N.J.* 421, 449, 593 *A.*2d 733 (1991)); *see also Hisenaj v. Kuehner*, 194 *N.J.* 6, 17, 942 *A.*2d 769 (2008). In general, proponents can prove the reliability of scientific evidence by offering "(1) the testimony of knowledgeable experts; (2) authoritative scientific literature; [and] (3) persuasive judicial decisions which acknowledge such general acceptance of expert testimony." *Rubanick, supra*, 125 *N.J.* at 432, 593 *A.*2d 733 (internal citation and quotation marks omitted); *see Moore, supra*, 188 *N.J.* at 206, 902 *A.*2d 1212. We also look for general acceptance of scientific evidence within the relevant scientific community. *Chun, supra*, 194 *N.J.* at 91, 943 *A.*2d 114 (citing *State v. Harvey*, 151 *N.J.* 117, 169–70, 699 *A.*2d 596 (1997) (citing *Frye v. United States*, 293 F. 1013, 1014 (D.C.Cir.1923) (remaining citations omitted))).

A. System Variables

We begin with variables within the State's control.

1. Blind Administration

An identification may be unreliable if the lineup procedure is not administered in double-blind or blind fashion. Double-blind administrators do not know who the actual suspect is. Blind administrators are aware of that information but shield themselves from knowing where the suspect is located in the lineup or photo array.

Dr. Wells testified that double-blind lineup administration is "the single most important characteristic that should apply to eyewitness identification" procedures. Its purpose is to prevent an administrator from intentionally or unintentionally influencing a witness' identification decision.

Research has shown that lineup administrators familiar with the suspect may leak that information "by consciously or unconsciously communicating to witnesses which lineup member is the suspect." *See* Sarah M. Greathouse & Margaret Bull Kovera, *Instruction Bias and Lineup Presentation Moderate the Effects of Administrator Knowledge on Eyewitness Identification*, 33 *Law & Hum. Behav.* 70, 71 (2009). Psychologists refer to that phenomenon as the "expectancy effect": "the tendency for experimenters to obtain results they expect . . . because they have helped to shape that response." Robert Rosenthal & Donald B. Rubin, *Interpersonal Expectancy Effects: The First 345 Studies*, 3 *Behav. & Brain Sci.* 377, 377 (1978). In a seminal meta-analysis of 345 studies across eight broad categories of behavioral research, researchers found that "[t]he overall probability that there is no such thing as interpersonal expectancy effects is near zero." *Ibid.*

Even seemingly innocuous words and subtle cues—pauses, gestures, hesitations, or smiles—can influence a witness' behavior. Ryann M. Haw & Ronald P. Fisher, *Effects of Administrator–Witness Contact on Eyewitness Identification Accuracy*, 89 *J. Applied Psychol.* 1106, 1107 (2004); *see also* Steven E. Clark et al., *Lineup Administrator Influences on Eyewitness Identification Decisions*, 15 *J. Experimental Psychol.: Applied* 63, 66–73 (2009). Yet the witness is often unaware that any cues have been given. *See* Clark et al., *supra*, at 72.

The consequences are clear: a non-blind lineup procedure can affect the reliability of a lineup because even the best-intentioned, non-blind administrator can act in a way that inadvertently sways an eyewitness trying to identify a suspect. An ideal lineup administrator, therefore, is someone who is not investigating the particular case and does not know who the suspect is.

The State understandably notes that police departments, no matter their size, have limited resources, and those limits can make it impractical to administer lineups double-blind in all cases. An alternative technique, which Dr. Wells referred to as the "envelope method," helps address that challenge. It relies on single-blind administration: an officer who knows the suspect's identity places single lineup photographs into different envelopes, shuffles them, and presents them to the witness. The officer/administrator then refrains from looking at the envelopes or pictures while the witness makes an identification. This "blinding" tech-

nique is cost-effective and can be used when resource constraints make it impractical to perform double-blind administration.

We find that the failure to perform blind lineup procedures can increase the likelihood of misidentification.

2. Pre-identification Instructions

Identification procedures should begin with instructions to the witness that the suspect may or may not be in the lineup or array and that the witness should not feel compelled to make an identification. There is a broad consensus for that conclusion. The Attorney General Guidelines currently include the instruction; the Special Master considers it "uncontroversial"; and the State agrees that "[w]itness instructions are regarded as one of the most useful techniques for enhancing the reliability of identifications" (quoting the Special Master).

Pre-lineup instructions help reduce the relative judgment phenomenon described in section III. Without an appropriate warning, witnesses may misidentify innocent suspects who look more like the perpetrator than other lineup members.

The scientists agree. In two meta-analyses, they found that telling witnesses in advance that the suspect may not be present in the lineup, and that they need not make a choice, led to more reliable identifications in target-absent lineups. *See* Nancy Mehrkens Steblay, *Social Influence in Eyewitness Recall: A Meta–Analytic Review of Lineup Instruction Effects*, 21 *Law & Hum. Behav.* 283, 285–86, 294 (1997); Steven E. Clark, *A Reexamination of the Effects of Biased Lineup Instructions in Eyewitness Identification*, 29 *Law & Hum. Behav.* 395, 418–20 (2005). In one experiment, 45% more people chose innocent fillers in target-absent lineups when administrators failed to warn that the suspect may not be there. *See* Roy S. Malpass & Patricia G. Devine, *Eyewitness Identification: Lineup Instructions and the Absence of the Offender*, 66 *J. Applied Psychol.* 482, 485 (1981).

The failure to give proper pre-lineup instructions can increase the risk of misidentification.

3. Lineup Construction

The way that a live or photo lineup is constructed can also affect the reliability of an identification. Properly constructed lineups test a witness' memory and decrease the chance that a witness is simply guessing.

A number of features affect the construction of a fair lineup. First, the Special Master found that "mistaken identifications are more likely to occur when the suspect stands out from other members of a live or photo lineup." *See* Roy S. Malpass et al., *Lineup Construction and Lineup Fairness, in* 2 *The Handbook of Eyewitness Psychology: Memory for People*, at 155, 156 (R.C.L. Lindsay et al. eds., 2007). As a result, a suspect should be included in a lineup comprised of look-alikes. The reason is simple: an array of look-alikes forces witnesses to examine their memory. In addition, a biased lineup may inflate a witness' confidence in the identification because the selection process seemed easy. *See* David F. Ross et al., *When Accurate and Inaccurate Eyewitnesses Look the Same: A Limitation of the 'Pop–Out' Effect and the 10– to 12–Second Rule*, 21 *Applied Cognitive Psychol.* 677, 687 (2007); Gary L. Wells & Amy L. Bradfield, *Measuring the Goodness of Lineups: Parameter Estimation, Question Effects, and Limits to the Mock Witness Paradigm*, 13 *Applied Cognitive Psychol.* S27, S30 (1999).

Second, lineups should include a minimum number of fillers. The greater the number of choices, the more likely the procedure will serve as a reliable test of the witness' ability to distinguish the culprit from an innocent person. As Dr. Wells testified, no magic number exists, but there appears to be general agreement that a minimum of five fillers should be used. *See* Nat'l Inst. of Justice, U.S. Dep't of Justice, *Eyewitness Evidence: A Guide for Law Enforcement* 29 (1999); Attorney General Guidelines, *supra*, at 2.

Third, based on the same reasoning, lineups should not feature more than one suspect. As the Special Master found, "if multiple suspects are in the lineup, the reliability of a positive identification

is difficult to assess, for the possibility of 'lucky' guesses is magnified."

The record is unclear as to whether the use of fillers that match a witness' pre-lineup description is more reliable than fillers that resemble an actual suspect (to the extent there is a difference between the two). *Compare* Steven E. Clark & Jennifer L. Tunnicliff, *Selecting Lineup Foils in Eyewitness Identification Experiments: Experimental Control and Real-World Simulation*, 25 *Law & Hum. Behav.* 199, 212 (2001), *and* Gary L. Wells et al., *The Selection of Distractors for Eyewitness Lineups*, 78 J. *Applied Psychol.* 835, 842 (1993), *with* Stephen Darling et al., *Selection of Lineup Foils in Operational Contexts*, 22 *Applied Cognitive Psychol.* 159, 165–67 (2008). Further research may help clarify this issue.

We note that the Attorney General Guidelines require that fillers "generally fit the witness' description" and that "[w]hen there is a limited or inadequate description of the perpetrator provided by the witness, or when the description of the perpetrator differs significantly from the appearance of the suspect, fillers should resemble the suspect in significant features." Attorney General Guidelines, *supra*, at 2–3; *see also* R.C.L. Lindsay et al., *Default Values in Eyewitness Descriptions*, 18 *Law & Hum. Behav.* 527, 528 (1994) ("Innocent suspects may be at risk when the witness provides a limited or vague description of the criminal and the lineup foils, although selected to match the description, are noticeably different from the suspect in appearance.").

Of course, all lineup procedures must be recorded and preserved in accordance with the holding in *Delgado*, *supra*, 188 *N.J.* at 63, 902 *A.*2d 888, to ensure that parties, courts, and juries can later assess the reliability of the identification.

We find that courts should consider whether a lineup is poorly constructed when evaluating the admissibility of an identification. When appropriate, jurors should be told that poorly constructed or biased lineups can affect the reliability of an identification and enhance a witness' confidence.

4. Avoiding Feedback and Recording Confidence

Information received by witnesses both before and after an identification can affect their memory. The earlier discussion of Dr. Loftus' study—in which she asked students how fast a car was going when it passed a non-existent barn—revealed how memories can be altered by pre-identification remarks. Loftus, *Leading Questions and the Eyewitness Report*, *supra*, at 566.

Confirmatory or post-identification feedback presents the same risks. It occurs when police signal to eyewitnesses that they correctly identified the suspect. That confirmation can reduce doubt and engender a false sense of confidence in a witness. Feedback can also falsely enhance a witness' recollection of the quality of his or her view of an event.

There is substantial research about confirmatory feedback. A meta-analysis of twenty studies encompassing 2,400 identifications found that witnesses who received feedback "expressed significantly more . . . confidence in their decision compared with participants who received no feedback." Douglass & Steblay, *supra*, at 863. The analysis also revealed that "those who receive a simple post-identification confirmation regarding the accuracy of their identification significantly inflate their reports to suggest better witnessing conditions at the time of the crime, stronger memory at the time of the lineup, and sharper memory abilities in general." *Id.* at 864–65; *see also* Gary L. Wells & Amy L. Bradfield, *"Good, You Identified the Suspect": Feedback to Eyewitnesses Distorts Their Reports of the Witnessing Experience*, 83 *J. Applied Psychol.* 360 (1998).

The effects of confirmatory feedback may be the same even when feedback occurs forty-eight hours after an identification. Gary L. Wells et al., *Distorted Retrospective Eyewitness Reports as Functions of Feedback and Delay*, 9 *J. Experimental Psychol.: Applied* 42, 49–50 (2003). And those effects can be lasting. *See* Jeffrey S. Neuschatz et al., *The Effects of Post–Identification Feedback and Age on Retrospective Eyewitness Memory*, 19 *Applied Cognitive Psychol.* 435, 449 (2005).

The Court concluded in *Romero, supra,* "that a witness's level of confidence, standing alone, may not be an indication of the reliability of the identification." 191 *N.J.* at 76, 922 *A.*2d 693. The hearing confirmed that observation. The Special Master found that eyewitness confidence is generally an unreliable indicator of accuracy, but he acknowledged research showing that *highly* confident witnesses can make accurate identifications 90% of the time. The State places great weight on that research. *See, e.g.,* Neil Brewer & Gary L. Wells, *The Confidence–Accuracy Relationship in Eyewitness Identification: Effects of Lineup Instructions, Foil Similarity, and Target–Absent Base Rates,* 12 *J. Experimental Psychol.: Applied* 11, 15 (2006); Siegfried Ludwig Sporer et al., *Choosing, Confidence, and Accuracy: A Meta–Analysis of the Confidence–Accuracy Relation in Eyewitness Identification Studies,* 118 *Psychol. Bull.* 315, 315–19, 322 (1995); *see also* Gary L. Wells & Elizabeth A. Olson, *Eyewitness Testimony,* 54 *Ann. Rev. Psychol.* 277, 283–84 (2003) (noting complexity of issue).[7]

We glean certain principles from this information. Confirmatory feedback can distort memory. As a result, to the extent confidence may be relevant in certain circumstances, it must be recorded in the witness' own words before any possible feedback. To avoid possible distortion, law enforcement officers should make a full record—written or otherwise—of the witness' statement of confidence once an identification is made. Even then, feedback about the individual selected must be avoided.

We rely on our supervisory powers under Article VI, Section 2, Paragraph 3 of the State Constitution in requiring that practice. *See Delgado, supra,* 188 *N.J.* at 63, 902 *A.*2d 888 (requiring written record of identification procedure).

[7] This section focuses only on post-identification confidence. Meta-analysis shows that eyewitness confidence in the ability to make an identification *before* viewing a lineup does not correlate with accuracy. *See* Brian L. Cutler & Steven D. Penrod, *Forensically Relevant Moderators of the Relation Between Eyewitness Identification Accuracy and Confidence,* 74 *J. Applied Psychol.* 650, 652 (1989).

To be sure, concerns about feedback are not limited to law enforcement officers. As discussed below, confirmatory feedback from non-State actors can also affect the reliability of identifications and witness confidence. *See infra* at section VI.B.9. *See, e.g.,* C.A. Elizabeth Luus & Gary L. Wells, *The Malleability of Eyewitness Confidence: Co–Witness and Perseverance Effects,* 79 *J. Applied Psychol.* 714, 717–18 (1994).

Our focus at this point, though, is on system variables. To reiterate, we find that feedback affects the reliability of an identification in that it can distort memory, create a false sense of confidence, and alter a witness' report of how he or she viewed an event.

5. Multiple viewings

Viewing a suspect more than once during an investigation can affect the reliability of the later identification. The problem, as the Special Master found, is that successive views of the same person can make it difficult to know whether the later identification stems from a memory of the original event or a memory of the earlier identification procedure.

It is typical for eyewitnesses to look through mugshot books in search of a suspect. Investigations may also involve multiple identification procedures. Based on the record, there is no impact on the reliability of the second identification procedure "when a picture of the suspect was not present in photographs examined earlier." Gunter Koehnken et al., *Forensic Applications of Line–Up Research, in Psychological Issues in Eyewitness Identification* 205, 218 (Siegfried L. Sporer et al. eds., 1996).

Multiple identification procedures that involve more than one viewing of the same suspect, though, can create a risk of "mugshot exposure" and "mugshot commitment." Mugshot exposure is when a witness initially views a set of photos and makes no identification, but then selects someone—who had been depicted in the earlier photos—at a later identification procedure. A meta-analysis of multiple studies revealed that although 15% of witnesses mistakenly identified an innocent person viewed in a lineup

for the first time, that percentage increased to 37% if the witness had seen the innocent person in a prior mugshot. Kenneth A. Deffenbacher et al., *Mugshot Exposure Effects: Retroactive Interference, Mugshot Commitment, Source Confusion, and Unconscious Transference*, 30 *Law & Hum. Behav.* 287, 299 (2006).

Mugshot commitment occurs when a witness identifies a photo that is then included in a later lineup procedure. Studies have shown that once witnesses identify an innocent person from a mugshot, "a significant number" then "reaffirm[ ] their false identification" in a later lineup—even if the actual target is present. *See* Koehnken et al., *supra*, at 219.

Thus, both mugshot exposure and mugshot commitment can affect the reliability of the witness' ultimate identification and create a greater risk of misidentification. As a result, law enforcement officials should attempt to shield witnesses from viewing suspects or fillers more than once.

6. *Simultaneous v. Sequential Lineups*

Lineups are presented either simultaneously or sequentially. Traditional, simultaneous lineups present all suspects at the same time, allowing for side-by-side comparisons. In sequential lineups, eyewitnesses view suspects one at a time.

Defendant and amici submit that sequential lineups are preferable because they lead to fewer misidentifications when the culprit is not in the lineup. The Attorney General Guidelines recommend that sequential lineups be utilized when possible, but the State also points to recent studies that have called that preference into doubt. Because the science supporting one procedure over the other remains inconclusive, we are unable to find a preference for either.

The strongest support for sequential lineups comes from a 2001 meta-analysis comparing data from more than 4,000 lineup experiments. *See* Nancy Steblay et al., *Eyewitness Accuracy Rates in Sequential and Simultaneous Lineup Presentations: A Meta-Analytic Comparison*, 25 *Law & Hum. Behav.* 459 (2001). Across

studies, simultaneous procedures produced more of both accurate and inaccurate identifications, and sequential procedures produced fewer misidentifications in target-absent lineups. *Id.* at 466, 468–69. In other words, witnesses were more likely to make selections—accurate and inaccurate—with simultaneous lineups, and they made fewer, but more accurate, identifications with sequential, target-absent lineups.

Some experts believe that the theory of relative judgment helps explain the results; with sequential lineups, witnesses cannot compare photos and choose the lineup member that best matches their memory. *See id.* at 469. Those researchers note that "[t]o the extent any difference . . . is due to correct guessing, there is no reason to recommend simultaneous lineups." *Ibid.*

Other experts, including Dr. Malpass, are unconvinced. They believe that researchers have not yet clearly shown that sequential presentation is the "active ingredient" in reducing misidentifications. Roy S. Malpass et al., *Public Policy and Sequential Lineups*, 14 *Legal & Criminological Psychol.* 1, 5–6 (2009); Dawn McQuiston–Surrett et al., *Sequential v. Simultaneous Lineups: A Review of Methods, Data, and Theory*, 12 *Psychol. Pub. Pol'y & L.* 137, 163 (2006) ("[W]e believe that current explanations for why sequential presentation should reduce both mistaken identifications and correct identifications are underdeveloped."); *see also* Scott D. Gronlund et al., *Robustness of the Sequential Lineup Advantage*, 15 *J. Experimental Psychol.: Applied* 140, 149 (2009) ("Based on our study [of more than 2,000 participants], the sequential advantage does not appear to be a robust finding.").[8]

As research in this field continues to develop, a clearer answer may emerge. For now, there is insufficient, authoritative evidence accepted by scientific experts for a court to make a finding in

[8] We do not consider the disputed Illinois field study, *see* Sheri H. Mecklenburg, Ill. Police Dep't, *Report to the Legislature of the State of Illinois: The Illinois Pilot Program on Sequential Double-Blind Identification Procedures* (2006), referred to *supra* at 231 n. 5, 27 *A.*3d at 886 n. 5.

favor of either procedure. *See Rubanick, supra,* 125 *N.J.* at 432, 449, 593 *A.*2d 733. As a result, we do not limit either one at this time.

7. Composites

When a suspect is unknown, eyewitnesses sometimes work with artists who draw composite sketches. Composites can also be prepared with the aid of computer software or non-computerized "tool kits" that contain picture libraries of facial features. Gary L. Wells & Lisa E. Hasel, *Facial Composite Production by Eyewitnesses,* 16 *Current Directions Psychol. Sci.* 6, 6–7 (2007).

As the Special Master observed, based on the record, "composites produce poor results." In one study, college freshman used computer software to generate composites of students and teachers from their high schools. Margaret Bull Kovera et al., *Identification of Computer–Generated Facial Composites,* 82 *J. Applied Psychol.* 235, 239 (1997). Different students who had attended the same schools were only able to name 3 of the 500 people depicted in the composites. *Id.* at 241. *But see* Wells & Hasel, *supra,* at 6 (acknowledging rarity of studies comparing sketch artists, whose skills vary widely, to computer systems).

Researchers attribute those results to a mismatch between how composites are made and how memory works. *See* Wells & Hasel, *supra,* at 9. Evidence suggests that people perceive and remember faces "holistically" and not "at the level of individual facial features." *Ibid.* Thus, creating a composite feature-by-feature may not comport with the holistic way that memories for faces "are generally processed, stored, and retrieved." *See ibid.*

It is not clear, though, what effect the process of making a composite has on a witness' memory—that is, whether it contaminates or confuses a witness' memory of what he or she actually saw. *Compare* Gary L. Wells et al., *Building Face Composites Can Harm Lineup Identification Performance,* 11 *J. Experimental Psychol.: Applied* 147, 148, 154 (2005) (finding "that building a composite significantly lowered accuracy for identifying the original face"), *with* Michael A. Mauldin & Kenneth R. Laughery,

Composite Production Effects on Subsequent Facial Recognition, 66 *J. Applied Psychol.* 351, 355 (1981) (finding "[w]hen subjects produce a[ ] . . . composite . . . they are more likely to recognize the target face in a subsequent recognition task").

As Dr. Wells acknowledged, "[t]he sparse, underpowered, and inconsistent literature on the effects of composite production on later recognition stands in contrast to the import of the question." Wells et al., *Building Face Composites Can Harm Lineup Identification Performance, supra,* at 148. We also note that researchers "are not yet prepared to argue that the use of composites should be significantly curtailed in criminal investigations." *Id.* at 155.

Without more accepted research, courts cannot make a finding on the effect the process of making a composite has on a witness. *See Rubanick, supra,* 125 *N.J.* at 432, 449, 593 *A.*2d 733. We thus do not limit the use of composites in investigations.

8. Showups

Showups are essentially single-person lineups: a single suspect is presented to a witness to make an identification. Showups often occur at the scene of a crime soon after its commission. The Special Master noted that they are a "useful—and necessary—technique when used in appropriate circumstances," but they carry their "own risks of misidentifications."

By their nature, showups are suggestive and cannot be performed blind or double-blind. Nonetheless, as the Special Master found, "the risk of misidentification is not heightened if a showup is conducted immediately after the witnessed event, ideally within two hours" because "the benefits of a fresh memory seem to balance the risks of undue suggestion."

We have previously found showups to be "inherently suggestive," *see Herrera, supra,* 187 *N.J.* at 504, 902 *A.*2d 177, and other states have limited the admissibility of showup identifications. In Wisconsin, evidence of a showup is inadmissible unless, based on the totality of circumstances, the showup was necessary. *State v.*

Dubose, 285 *Wis.*2d 143, 699 *N.W.*2d 582, 584–85 (2005). Courts in Massachusetts require that there be "good reason for the use of a showup." *Commonwealth v. Martin*, 447 *Mass.* 274, 850 *N.E.*2d 555, 562–63 (2006). In New York, showups at police stations are presumptively suggestive and are suppressed "unless exigency warrants otherwise." *State v. Duuvon*, 77 *N.Y.*2d 541, 569 *N.Y.S.*2d 346, 571 *N.E.*2d 654, 656 (1991) (citations omitted).

Studies that have evaluated showup identifications illustrate that the timeframe for their reliability appears relatively small. A Canadian field experiment that analyzed results from more than 500 identifications revealed that photo showups performed within minutes of an encounter were just as accurate as lineups. A. Daniel Yarmey et al., *Accuracy of Eyewitness Identifications in Showups and Lineups*, 20 *Law & Hum. Behav.* 459, 464 (1996). Two hours after the encounter, though, 58% of witnesses failed to reject an "innocent suspect" in a photo showup, as compared to 14% in target-absent photo lineups. *Ibid.*

Researchers have also found that "false identifications are more numerous for showups [compared to lineups] when an innocent suspect resembles the perpetrator." *See* Nancy Steblay et al., *Eyewitness Accuracy Rates in Police Showup and Lineup Presentations: A Meta–Analytic Comparison*, 27 *Law & Hum. Behav.* 523, 523 (2003) (conducting meta-analysis). In addition, research reveals that showups increase the risk that witnesses will base identifications more on similar distinctive clothing than on similar facial features. *See* Jennifer E. Dysart et al., *Show-ups: The Critical Issue of Clothing Bias*, 20 *Applied Cognitive Psychol.* 1009, 1019 (2006); *see also* Yarmey et al., *supra*, at 461, 470 (showing greater likelihood of misidentification when culprit and innocent suspect looked alike *and* wore same clothing).

Experts believe the main problem with showups is that—compared to lineups—they fail to provide a safeguard against witnesses with poor memories or those inclined to guess, because every mistaken identification in a showup will point to the suspect. In essence, showups make it easier to make mistakes.

Thus, the record casts doubt on the reliability of showups conducted more than two hours after an event, which present a heightened risk of misidentification. As with lineups, showup administrators should instruct witnesses that the person they are about to view may or may not be the culprit and that they should not feel compelled to make an identification. That said, lineups are a preferred identification procedure because we continue to believe that showups, while sometimes necessary, are inherently suggestive. *See Herrera*, *supra*, 187 *N.J.* at 504, 902 *A.*2d 177.

B. Estimator variables

Unlike system variables, estimator variables are factors beyond the control of the criminal justice system. *See* Wells, *Applied Eyewitness–Testimony Research: System Variables and Estimator Variables*, *supra*, at 1546. They can include factors related to the incident, the witness, or the perpetrator. Estimator variables are equally capable of affecting an eyewitness' ability to perceive and remember an event. Although the factors can be isolated and tested in lab experiments, they occur at random in the real world.

1. Stress

Even under the best viewing conditions, high levels of stress can diminish an eyewitness' ability to recall and make an accurate identification. The Special Master found that "while moderate levels of stress improve cognitive processing and might improve accuracy, an eyewitness under high stress is less likely to make a reliable identification of the perpetrator." The State agrees that high levels of stress are more likely than low levels to impair an identification.

Scientific research affirms that conclusion. A meta-analysis of sixty-three studies showed "considerable support for the hypothesis that high levels of stress negatively impact both accuracy of eyewitness identification as well as accuracy of recall of crime-related details." *See* Deffenbacher et al., *A Meta–Analytic Review of the Effects of High Stress on Eyewitness Memory*, *supra*, at 687, 699.

One field experiment tested the impact of stress on the memories of military personnel. *See* Charles A. Morgan III et al., *Accuracy of Eyewitness Memory for Persons Encountered During Exposure to Highly Intense Stress*, 27 *Int'l J.L. & Psychiatry* 265 (2004). More than 500 active-duty military personnel, with an average of four years in the service, experienced two types of interrogation after twelve hours of confinement in survival school training: "a high-stress interrogation (with real physical confrontation) and a low-stress interrogation (without physical confrontation)." *Id.* at 267–68. Both interrogations lasted about 40 minutes. *Id.* at 268. Twenty-four hours later, the subjects were shown either a live lineup or a sequential or simultaneous photo array, and asked to identify their interrogators. *Id.* at 269–70.

Across the procedures, subjects performed more poorly when they identified their high-stress interrogators. *Id.* at 272. For example, when viewing live line-ups, 30% of subjects accurately identified high-stress interrogators, but 62% did so for low-stress interrogators. *Ibid.* The study's authors concluded that

> [c]ontrary to the popular conception that most people would never forget the face of a clearly seen individual who had physically confronted them and threatened them for more than 30 min[utes], ... [t]hese data provide robust evidence that eyewitness memory for persons encountered during events that are personally relevant, highly stressful, and realistic in nature may be subject to substantial error.
>
> [*Id.* at 274.]

Although the study was conducted under a rather different setting, all three experts at the hearing considered its findings in the context of eyewitness evidence.

We find that high levels of stress are likely to affect the reliability of eyewitness identifications. There is no precise measure for what constitutes "high" stress, which must be assessed based on the facts presented in individual cases.

2. Weapon Focus

When a visible weapon is used during a crime, it can distract a witness and draw his or her attention away from the culprit. "Weapon focus" can thus impair a witness' ability to make a reliable identification and describe what the culprit looks like if the crime is of short duration.

A meta-analysis of nineteen weapon-focus studies that involved more than 2,000 identifications found a small but significant effect: an average decrease in accuracy of about 10% when a weapon was present. Nancy M. Steblay, *A Meta–Analytic Review of the Weapon Focus Effect*, 16 *Law & Hum. Behav.* 413, 415–17 (1992). In a separate study, half of the witnesses observed a person holding a syringe in a way that was personally threatening to the witness; the other half saw the same person holding a pen. Anne Maass & Gunther Kohnken, *Eyewitness Identification: Simulating the "Weapon Effect"*, 13 *Law & Hum. Behav.* 397, 401–02 (1989). Sixty-four percent of witnesses from the first group misidentified a filler from a target-absent lineup, compared to 33% from the second group. *See id.* at 405; *see also* Kerri L. Pickel, *Remembering and Identifying Menacing Perpetrators: Exposure to Violence and the Weapon Focus Effect*, *in* 2 *The Handbook of Eyewitness Psychology: Memory for People*, *supra*, at 339, 353–54 (noting that "unusual items [like weapons] attract attention").

Weapon focus can also affect a witness' ability to describe a perpetrator. A meta-analysis of ten studies showed that "weapon-absent condition[s] generated significantly more accurate descriptions of the perpetrator than did the weapon-present condition." Steblay, *A Meta–Analytic Review of the Weapon Focus Effect*, *supra*, at 417.

The duration of the crime is also an important consideration. Dr. Steblay concluded that weapon-focus studies speak to real-world "situations in which a witness observes a threatening object ... in an event of short duration." *Id.* at 421. As Dr. Wells testified, the longer the duration, the more time the witness has to adapt to the presence of a weapon and focus on other details.

Thus, when the interaction is brief, the presence of a visible weapon can affect the reliability of an identification and the accuracy of a witness' description of the perpetrator.

3. Duration

Not surprisingly, the amount of time an eyewitness has to observe an event may affect the reliability of an identification. The Special Master found that "while there is no minimum time required to make an accurate identification, a brief or fleeting contact is less likely to produce an accurate identification than a more prolonged exposure." *See* Colin G. Tredoux et al., *Eyewitness Identification, in* 1 *Encyclopedia of Applied Psychology* 875, 877 (Charles Spielberger ed., 2004).

There is no measure to determine exactly how long a view is needed to be able to make a reliable identification. Dr. Malpass testified that very brief but good views can produce accurate identifications, and Dr. Wells suggested that the quality of a witness' memory may have as much to do with the absence of other distractions as with duration.

Whatever the threshold, studies have shown, and the Special Master found, "that witnesses consistently tend to overestimate short durations, particularly where much was going on or the event was particularly stressful." *See, e.g.,* Elizabeth F. Loftus et al., *Time Went by So Slowly: Overestimation of Event Duration by Males and Females,* 1 *Applied Cognitive Psychol.* 3, 10 (1987).

4. Distance and Lighting

It is obvious that a person is easier to recognize when close by, and that clarity decreases with distance. We also know that poor lighting makes it harder to see well. Thus, greater distance between a witness and a perpetrator and poor lighting conditions can diminish the reliability of an identification.

Scientists have refined those common-sense notions with further study. *See, e.g.,* R.C.L. Lindsay et al., *How Variations in Distance Affect Eyewitness Reports and Identification Accuracy,* 32 *Law & Hum. Behav.* 526 (2008). Research has also shown that people have difficulty estimating distances. *See, e.g., id.* at 533.

5. Witness Characteristics

Characteristics like a witness' age and level of intoxication can affect the reliability of an identification.

The Special Master found that "the effects of alcohol on identification accuracy show that high levels of alcohol promote false identifications" and that "low alcohol intake produces fewer misidentifications than high alcohol intake." *See also* Jennifer E. Dysart et al., *The Intoxicated Witness: Effects of Alcohol on Identification Accuracy from Showups,* 87 *J. Applied Psychol.* 170, 174 (2002). That finding is undisputed.

The Special Master also found that "[a] witness's age . . . bears on the reliability of an identification." A meta-analysis has shown that children between the ages of nine and thirteen who view target-absent lineups are more likely to make incorrect identifications than adults. *See* Joanna D. Pozzulo & R.C.L. Lindsay, *Identification Accuracy of Children Versus Adults: A Meta-Analysis,* 22 *Law & Hum. Behav.* 549, 563, 565 (1998). Showups in particular "are significantly more suggestive or leading with children." *See* Jennifer E. Dysart & R.C.L. Lindsay, *Show-up Identifications: Suggestive Technique or Reliable Method?, in* 2 *The Handbook of Eyewitness Psychology: Memory for People* 137, 147 (2007).

Some research also shows that witness accuracy declines with age. Across twelve studies, young witnesses—ranging from nineteen to twenty-four years old—were more accurate when viewing target-absent lineups than older witnesses—ranging from sixty-eight to seventy-four years old. *See* James C. Bartlett & Amina Memon, *Eyewitness Memory in Young and Older Adults, in* 2 *The Handbook of Eyewitness Psychology: Memory for People, supra,* at 309, 317–19. On average, 53% of young witnesses recognized that the target was not in the lineup, compared to only 31% of older witnesses. *Id.* at 318.

But the target's age may matter as well. As Dr. Penrod testified, "there's an own-age bias," meaning that witnesses are

"better at recognizing people of [their] own age than . . . people of other ages." That effect may appear in studies that use college-age students as targets, for example. *See id.* at 321–23 (concluding that "young adults show better memory for young faces . . . than older faces, whereas seniors show either no effect or the opposite effect"); *see also* Melissa Boyce et al., *Belief of Eyewitness Identification Evidence, in* 2 *The Handbook of Eyewitness Psychology: Memory for People, supra,* at 501, 512 ("Perhaps people should only use age as a factor in deciding whether to believe an eyewitness if there is a large age difference between the witness and the suspect.").

Thus, the data about memory and older witnesses is more nuanced, according to the scientific literature. In addition, there was little other testimony at the hearing on the topic. Based on the record before us, we cannot conclude that a standard jury instruction questioning the reliability of identifications by all older eyewitnesses would be appropriate for use in all cases.

6. Characteristics of Perpetrator

Disguises and changes in facial features can affect a witness' ability to remember and identify a perpetrator. The Special Master found that "[d]isguises (e.g., hats, sunglasses, masks) are confounding to witnesses and reduce the accuracy of identifications." According to the State, those findings are "so well-known that criminals employ them in their work."

Disguises as simple as hats have been shown to reduce identification accuracy. *See* Brian L. Cutler et al., *Improving the Reliability of Eyewitness Identification: Putting Context into Context,* 72 *J. Applied Psychol.* 629, 635 (1987).

If facial features are altered between the time of the event and the identification procedure—if, for example, the culprit grows a beard—the accuracy of an identification may decrease. *See* K.E. Patterson & A.D. Baddeley, *When Face Recognition Fails,* 3 *J. Experimental Psychol.: Hum. Learning & Memory* 406, 410, 414 (1977).

7. Memory Decay

Memories fade with time. And as the Special Master observed, memory decay "is irreversible"; memories never improve. As a result, delays between the commission of a crime and the time an identification is made can affect reliability. That basic principle is not in dispute.

A meta-analysis of fifty-three "facial memory studies" confirmed "that memory strength will be weaker at longer retention intervals [the amount of time that passes] than at briefer ones." Kenneth A. Deffenbacher et al., *Forgetting the Once–Seen Face: Estimating the Strength of an Eyewitness's Memory Representation,* 14 *J. Experimental Psychol.: Applied* 139, 142 (2008). In other words, the more time that passes, the greater the possibility that a witness' memory of a perpetrator will weaken. *See* Krafka & Penrod, *supra,* at 65 (finding substantial increase in misidentification rate in target-absent arrays from two to twenty-four hours after event). However, researchers cannot pinpoint precisely when a person's recall becomes unreliable.

8. Race-bias

"A cross-racial identification occurs when an eyewitness is asked to identify a person of another race." *Cromedy, supra,* 158 *N.J.* at 120, 727 *A.*2d 457. In *Cromedy,* after citing multiple social science sources, this Court recognized that a witness may have more difficulty making a cross-racial identification. *Id.* at 120–23, 131, 727 *A.*2d 457.

A meta-analysis conducted after *Cromedy,* involving thirty-nine studies and nearly 5,000 identifications, confirmed the Court's prior finding. *See* Christian A. Meissner & John C. Brigham, *Thirty Years of Investigating the Own–Race Bias in Memory for Faces: A Meta–Analytic Review,* 7 *Psychol. Pub. Pol'y & Law* 3, 21 (2001).

Cross-racial recognition continues to be a factor that can affect the reliability of an identification. *See also infra* at section X.

9. Private Actors

The current Model Jury Charge states that judges should refer to "factors relating to suggestiveness, that are supported by the evidence," including "whether the witness was exposed to opinions, descriptions, or identifications given by other witnesses, to photographs or newspaper accounts, or to any other information or influence that may have affected the independence of his/her identification." *Model Jury Charge (Criminal),* "Identification: In–Court and Out–of–Court Identifications" (2007). The charge was added after this Court in *Herrera* invited the Model Jury Charge Committee to consider including express references to suggestibility. *Herrera, supra,* 187 *N.J.* at 509–10, 902 *A.*2d 177 (citing *State v. Long,* 721 *P.*2d 483 (Utah 1980)). In response, the Committee relied heavily on proposed charging language in *Long.*

The Model Jury Charge properly reflects that private—that is, non-State—actors can affect the reliability of eyewitness identifications, just as the police can. The record on remand supports that conclusion. Studies show that witness memories can be altered when co-eyewitnesses share information about what they observed. Those studies bolster the broader finding "that post-identification feedback does not have to be presented by the experimenter or an authoritative figure (e.g. police officer) in order to affect a witness' subsequent crime-related judgments." *See* Elin M. Skagerberg, *Co–Witness Feedback in Line-ups,* 21 *Applied Cognitive Psychol.* 489, 494 (2007). Feedback and suggestiveness can come from co-witnesses and others not connected to the State.

Co-witness feedback may cause a person to form a false memory of details that he or she never actually observed. In an early study, 200 college students "viewed a film clip, read and evaluated a description of that film ostensibly given by another witness, and wrote out their own description based on their memory of the film." Elizabeth F. Loftus & Edith Greene, *Warning: Even Memory for Faces May Be Contagious,* 4 *Law & Hum. Behav.* 323, 328 (1980). The short film depicted a man who parked his

car, briefly entered a small grocery store, and upon returning, "got into an argument with a young man who looked as if he were trying to break into the car." *Ibid.*

Some of the students were shown accurate descriptions of the event, and the rest read descriptions that contained false details. *See ibid.* Some students, for example, observed a young man with straight hair but then read testimony that described the hair as wavy. *Id.* at 328–29. "This procedure was intended to simulate the situation where a witness to an event is subsequently exposed, either through conversation or reading a newspaper article, to a version given by another witness." *Id.* at 324. Results showed that one-third (34%) of students included a false detail—like wavy hair—when they later described the target. *Id.* at 329. By contrast, only 5% of the students who read a completely factual narrative made similar mistakes. *Ibid.* In a related experiment, "[i]f the other witness referred to a misleading detail [a nonexistent mustache], [69]% of the subjects later 'recognized' an individual with that feature. Control subjects did so far less often (13%)." *Id.* at 323, 330.

More recent studies have yielded comparable findings. *See* Lorraine Hope et al., *"With a Little Help from My Friends . . .": The Role of Co–Witness Relationship in Susceptibility to Misinformation,* 127 *Acta Psychologica* 476, 481 (2008) (noting that all participants "were susceptible to misinformation from their co-witness and, as a consequence, produced less accurate recall accounts than participants who did not interact with another witness"); *see also* Helen M. Paterson & Richard I. Kemp, *Comparing Methods of Encountering Post–Event Information: The Power of Co–Witness Suggestion,* 20 *Applied Cognitive Psychol.* 1083, 1083 (2006) ("Results suggest that co-witness information had a particularly strong influence on eyewitness memory, whether encountered through co-witness discussion or indirectly through a third party."); John S. Shaw, III et al., *Co–Witness Information Can Have Immediate Effects on Eyewitness Memory Reports,* 21 *Law. & Hum. Behav.* 503, 503, 516 (1997) ("[W]hen

participants received incorrect information about a co-witness's response, they were significantly more likely to give that incorrect response than if they received no co-witness information."); Rachel Zajac & Nicola Henderson, *Don't It Make My Brown Eyes Blue: Co–Witness Misinformation About a Target's Appearance Can Impair Target–Absent Lineup Performance*, 17 *Memory* 266, 275 (2009) ("[P]articipants who were [wrongly] told by the [co-witness] that the accomplice had blue eyes were significantly more likely than control participants to provide this information when asked to give a verbal description.").

One of the experiments evaluated the effect of the nature of the witnesses' relationships with one another and compared co-witnesses who were strangers, friends, and couples. Hope et al., *supra*, at 478. The study found that "witnesses who were previously acquainted with their co-witness (as a friend or romantic partner) were significantly more likely to incorporate information obtained solely from their co-witness into their own accounts." *Id.* at 481.

Private actors can also affect witness confidence. *See* Luus & Wells, *supra*, at 714. In one study, after witnesses made identifications—all of which were incorrect—some witnesses were either told that their co-witness made the same or a different identification. *Id.* at 717. Confidence rose when witnesses were told that their co-witness agreed with them, and fell when co-witnesses disagreed. *See id.* at 717–18; *see also* Skagerberg, *supra*, at 494–95 (showing similar results).

In addition, all three experts, Drs. Malpass, Penrod, and Wells, testified at the remand hearing that co-witnesses can influence memory and recall.

To uncover relevant information about possible feedback from co-witnesses and other sources, we direct that police officers ask witnesses, as part of the identification process, questions designed to elicit (a) whether the witness has spoken with anyone about the identification and, if so, (b) what was discussed. That information should be recorded and disclosed to defendants. We again rely on our supervisory powers under Article VI, Section 2, Paragraph 3 of the State Constitution in requiring those steps. *See Delgado*, *supra*, 188 *N.J.* at 63, 902 *A.*2d 888.

Based on the record, we find that non-State actors like co-witnesses and other sources of information can affect the independent nature and reliability of identification evidence and inflate witness confidence—in the same way that law enforcement feedback can. As a result, law enforcement officers should instruct witnesses not to discuss the identification process with fellow witnesses or obtain information from other sources.

We address this issue further in *Chen*, *supra*.

10. Speed of Identification

The Special Master also noted that the speed with which a witness makes an identification can be a reliable indicator of accuracy. The State agrees. (Although the factor is not a pure system or estimator variable, we include it at this point for convenience.)

Laboratory studies offer mixed results. *Compare* Steven M. Smith et al., *Postdictors of Eyewitness Errors: Can False Identifications Be Diagnosed?*, 85 *J. Applied Psychol.* 542, 542 (2000) (noting "[d]ecision time and lineup fairness were the best postdictors of accuracy"), *and* David Dunning & Scott Perretta, *Automaticity and Eyewitness Accuracy: A 10– to 12–Second Rule for Distinguishing Accurate from Inaccurate Positive Identifications*, 87 *J. Applied Psychol.* 951, 959 (2002) (finding across four studies that identifications were nearly 90% accurate when witnesses identified targets within ten to twelve seconds of seeing a lineup), *with* Ross et al., *supra*, at 688 (noting that rapid identifications were only 59%, not 90%, accurate and finding twenty-five seconds to be "time boundary" between accurate and inaccurate identifications).

Because of the lack of consensus in the scientific community, we make no finding on this issue. *See Rubanick*, *supra*, 125 *N.J.* at 432, 449, 593 *A.*2d 733. To the extent speed is relevant in any

event, researchers also caution that it may only be considered if the lineup is fair and unbiased. *See* Ross et al., *supra*, at 688–89.

C. Juror Understanding

Some of the findings described above are intuitive. Everyone knows, for instance, that bad lighting conditions make it more difficult to perceive the details of a person's face. Some findings are less obvious. Although many may believe that witnesses to a highly stressful, threatening event will "never forget a face" because of their intense focus at the time, the research suggests that is not necessarily so. *See supra* at section VI.B.1.

Using survey questionnaires and mock-jury studies, experts have attempted to discern what lay people understand, and what information about perception and memory are beyond the ken of the average juror. Based on those studies, the Special Master found "that laypersons are largely unfamiliar" with scientific findings and "often hold beliefs to the contrary." Defendant and amici agree. The State does not. The State argues that the sources the Special Master cited are unreliable, and that jurors generally understand how memory functions and how it can be distorted.

The parties devote much attention to this issue. But the debate relates largely to the need for enhanced jury instructions and the possible use of expert testimony. Left unanswered amidst many objections is this question: if even only a small number of jurors do not appreciate an important, relevant concept, why not help them understand it better with an appropriate jury charge?

Survey questionnaires provide the most direct evidence of what jurors know about memory and eyewitness identifications. Researchers conducting the surveys ask jurors questions about memory and system and estimator variables. The results can then be compared to expert responses in separate surveys.

Survey studies have generated varied results. The Special Master relied on data from a 2006 survey (the "Benton Survey") that asked 111 jurors in Tennessee questions about eyewitness

identification and memory. *See* Tanja Rapus Benton et al., *Eyewitness Memory Is Still Not Common Sense: Comparing Jurors, Judges and Law Enforcement to Eyewitness Experts*, 20 *Applied Cognitive Psychol.* 115, 118 (2006). Juror responses differed from expert responses on 87% of the issues. *Id.* at 119–21. Among other issues, only 41% of jurors agreed with the importance of pre-lineup instructions, and only 38% to 47% agreed with the effects of the accuracy-confidence relationship, weapon focus, and cross-race bias. *Id.* at 120. By comparison, about nine of ten experts agreed on the effects of all of those issues. *Ibid.*

The State disputes the Benton study for various reasons and instead highlights results from Canadian surveys conducted in 2009, which showed a substantially higher level of juror understanding. *See* J. Don Read & Sarah L. Desmarais, *Expert Psychology Testimony on Eyewitness Identification: A Matter of Common Sense?, in Expert Testimony on the Psychology of Eyewitness Identification*, at 115, 120–27. The majority of jury-eligible participants in those surveys agreed with experts on the importance of lineup instructions, the accuracy-confidence relationship, cross-race bias, and weapon focus. *See id.* at 121–22. Still, as the survey authors acknowledged, "substantial differences in knowledge and familiarity between experts and laypersons were readily apparent for 50% of the eyewitness topics." *Id.* at 127.

Mock-jury studies provide another method to try to discern what jurors know. The State argues that mock-jury research is unreliable because it is not possible to replicate the atmosphere of a criminal trial in a mock-trial setting. While true, that comment does not justify scuttling the studies entirely. Also, the growing use of mock trials by the private bar undercuts the strength of the assertion. *See generally* Martha Neil, *Practice Makes Perfect: Mock Trials Gain Ground as a Way to Get Inside Track in Real Trial*, 89 *A.B.A.J.* 34 (2003).

The Special Master did cite the studies. In one mock-jury experiment, researchers showed jurors different versions of a videotaped mock trial about an armed robbery of a liquor store.

Brian L. Cutler et al., *Juror Sensitivity to Eyewitness Identification Evidence*, 14 *Law & Hum. Behav.* 185, 186–87 (1990). To test how sensitive jurors were to the effect of weapon focus, some heard an eyewitness testify that the defendant pointed a gun at her during the robbery, while others heard that the gun was hidden in the robber's jacket. *Id.* at 188. Similarly, some jurors heard the eyewitness declare that she was 80% confident that she had correctly identified the robber, while others heard that she was 100% confident. *Id.* at 189 Researchers used similar methods to test reactions to eight other system and estimator variables. *See id.* at 188–89.

The study revealed that mock-jurors "were insensitive to the effects of disguise, weapon presence, retention interval, suggestive lineup instructions, and procedures used for constructing and carrying out the lineup" but "gave disproportionate weight to the confidence of the witness." *Id.* at 190. Stated otherwise, eyewitness confidence "was the most powerful predictor of verdicts" regardless of other variables. *Id.* at 185. The authors thus concluded that jurors do "not evaluate eyewitness memory in a manner consistent with psychological theory and findings." *See id.* at 190.

Neither juror surveys nor mock-jury studies can offer definitive proof of what jurors know or believe about memory. But they reveal generally that people do not intuitively understand all of the relevant scientific findings. As a result, there is a need to promote greater juror understanding of those issues.

D. Consensus Among Experts

The Special Master found broad consensus within the scientific community on the relevant scientific issues. Primarily, he found support in a 2001 survey of sixty-four experts, mostly cognitive and social psychologists. *See* Saul M. Kassin et al., *On the "General Acceptance" of Eyewitness Testimony Research: A New Survey of the Experts*, 56 *Am. Psychologist* 405, 407 (2001) (the "Kassin Report"). Ninety-two percent of the participating experts had published articles or books on eyewitness identification, and

many in the group had testified as expert witnesses in almost 1,000 court cases, collectively. *Id.* at 409.

Ninety percent or more of the experts found research on the following topics reliable: suggestive wording; lineup instruction bias; confidence malleability; mugshot bias; post-event information; child suggestivity; alcohol intoxication; and own-race bias. *Id.* at 412. Seventy to 87% found the following research reliable: weapon focus; the accuracy-confidence relationship; memory decay; exposure time; sequential presentation; showups; description-matched foils; child-witness accuracy; and lineup fairness. *Ibid.*

The State suggests that some of the experts surveyed in the Kassin Report had motives to overstate the science because they were also forensic consultants who have been paid for testifying at trials. *See id.* 414–15. As a result, the State discounts the results in the Report. The Report's authors recognized this potential for bias and looked for distinctions between answers provided by "forensic consultants" and the 44% of scientists who had never testified in court. *Ibid.* The analysis revealed "no significant difference" between the two groups. *Id.* at 415.

The studies and meta-analyses published in the ten years since the Kassin Report show a growing consensus in certain areas of eyewitness identification research. For example, only 60% of experts in 2001 found research on the relationship between stress and identification accuracy to be reliable. *Id.* at 412. At the remand hearing, all three experts testified that results from the military stress experiment, *see* Morgan III et al., *supra*, and other studies have reinforced views about the relationship between high stress and the reliability of identifications.

Among the experts who testified on remand, there was broad consensus regarding the Special Master's findings. The State's expert, Dr. Malpass, agreed with nearly all of the conclusions offered by Drs. Wells and Penrod. As Dr. Malpass wrote in 2009, "there is general agreement about the scientific findings of the eyewitness community," as evidenced by meta-analytic reviews,

primary texts, and surveys of scientific experts, and "[a] review of these areas suggests that it would be very difficult to sustain the position that many of the findings in research on eyewitness memory lack general agreement within the scientific community." Malpass et al., *The Need for Expert Psychological Testimony on Eyewitness Identification, supra,* at 15.

VII. Responses to Scientific Studies

Beyond the scientific community, law enforcement and reform agencies across the nation have taken note of the scientific findings. In turn, they have formed task forces and recommended or implemented new procedures to improve the reliability of eyewitness identifications. *See, e.g.,* Ad Hoc Innocence Comm. to Ensure the Integrity of the Criminal Process, Am. Bar Ass'n, *Achieving Justice: Freeing the Innocent, Convicting the Guilty* (2006); Int'l Ass'n of Chiefs of Police, *supra;* Nat'l Inst. of Justice, U.S. Dep't of Justice, *Eyewitness Evidence: A Guide for Law Enforcement, supra.*

New Jersey has been at the forefront of that effort. In 2001, under the leadership of then-Attorney General John J. Farmer, Jr., New Jersey became "the first state in the Nation to officially adopt the recommendations issued by the Department of Justice" and issue guidelines for preparing and conducting identification procedures. *See* Letter from Attorney General John J. Farmer, Jr., to All County Prosecutors et al., at 1 (Apr. 18, 2001) (AG Farmer Letter), available at http://www.state.nj.us/lps/dcj/agguide/photoid.pdf.

The Attorney General Guidelines "incorporate[d] more than 20 years of scientific research on memory and interview techniques." *Ibid.* The preamble describes the document as a list of "best practices." *See* Attorney General Guidelines, *supra,* at 1. The list is divided into two broad categories: composing photo or live lineups, and conducting identification procedures. Many, but not all, of the practices measure up to current scientific standards. Although we have discussed parts of the Guidelines in the preceding sections, we summarize them as a whole for the sake of completeness.

The Guidelines applied the following "best practices" to live and photo lineups: "Include only one suspect in each identification procedure"; select fillers based on the "witness' description of the perpetrator"; if the description is limited, inadequate, or differs significantly from the suspect's appearance, "fillers should resemble the suspect in significant features"; include a minimum of four or five fillers; consider placing the suspect in different lineup positions when conducting more than one lineup in a case with multiple witnesses; and "[a]void reusing fillers in lineups" when showing the same witness a new suspect. *Id.* at 1–3. When constructing photo lineups, officers should also "[e]nsure that no writings or information concerning previous arrest(s) will be visible to the witness"; "[v]iew the array, once completed, to ensure that the suspect does not unduly stand out"; and "[p]reserve the presentation order of the photo lineup" and the photos themselves. *Id.* at 2.

The Guidelines also set out specific rules for administering lineups. To avoid administrator feedback, "the person conducting the photo or live lineup identification procedure should be someone other than the primary investigator assigned to the case." *Id.* at 1. If that is impractical, the non-blind lineup administrator "should be careful to avoid inadvertent signaling to the witness of the 'correct' response." *Ibid.*

Under the Guidelines, administrators should instruct witnesses "that the perpetrator may not be among those in the photo array or live lineup and, therefore, they should not feel compelled to make an identification." *Ibid.* The Guidelines also state a preference for sequential over simultaneous lineup presentation. *See ibid.*

During the procedure, administrators must "[a]void saying anything to the witness that may influence the witness' selection." *Id.* at 3–6. If the witness makes an identification, officers should "avoid reporting to the witness any information regarding the

individual he or she has selected prior to obtaining the witness' statement of certainty." *Ibid.*

Officers must record the results obtained from the witness. *See id.* at 7. As part of that process, officers are to record both the outcome of the identification and "the witness' own words regarding how sure he or she is." *Ibid.* If a witness fails to make an identification, that too should be recorded. *Ibid.* In addition, officers should instruct witnesses not to discuss the procedure or its results with other witnesses. *Id.* at 4–7.

The Attorney General Guidelines are thorough and exacting. We once again commend the Attorney General's Office for responding to important social scientific evidence and promoting the reliability of eyewitness identifications. *See Delgado, supra,* 188 *N.J.* at 62, 902 *A.*2d 888; *see also Romero, supra,* 191 *N.J.* at 74, 922 *A.*2d 693. Since 2001, when the recommended Guidelines went into effect, they may well have prevented wrongful convictions.

However, the Guidelines are a series of recommended best practices. The Attorney General expressly noted that identifications that do not follow the recommended Guidelines should not be deemed "inadmissible or otherwise in error." AG Farmer Letter, *supra,* at 3. Although the State argues that the Court should defer to other branches of government to deal with the evolving social scientific landscape, it remains the Court's obligation to guarantee that constitutional requirements are met, and to ensure the integrity of criminal trials. *See Romero, supra,* 191 *N.J.* at 74–75, 922 *A.*2d 693 (citing court's supervisory authority under *N.J. Const.* art. VI, § 2, ¶ 3); *Delgado, supra,* 188 *N.J.* at 62, 902 *A.*2d 888 (same); *see also State v. Daniels,* 182 *N.J.* 80, 95–96, 861 *A.*2d 808 (2004).

Other state and local authorities have instituted similar changes to their eyewitness identification procedures. In 2005, for example, the Attorney General of Wisconsin issued a set of identification guidelines recommending, among other things, "double-blind, sequential photo arrays and lineups with non-suspect fillers chosen

to minimize suggestiveness, non-biased instructions to eyewitnesses, and assessments of confidence immediately after identifications." Office of the Attorney Gen., Wis. Dep't of Justice, *Model Policy and Procedure for Eyewitness Identification* 1 (2005); *see also* Dallas Police Dep't, Dallas Police Department General Order § 304.01 (2009); Denver Police Dep't, *Operations Manual* § 104.44 (2006); Police Chiefs' Ass'n of Santa Clara County, *Lineup Protocol for Law Enforcement* (2002).

North Carolina was among the first states to pass legislation mandating, among other things, pre-lineup instructions and blind and sequential lineup administration. *See N.C. Gen.Stat.* § 15A–284.50 to .53. Illinois, Maryland, Ohio, West Virginia, and Wisconsin have passed similar laws regarding lineup practices. *See* 725 *Ill. Comp. Stat.* 5/107A–5; *Md.Code Ann., Pub. Safety* § 3–506; *Ohio Rev.Code Ann.* § 2933.83; *W. Va.Code Ann.* § 62–1E–1 to –3; *Wis. Stat.* § 175.50.

VIII. Parties' Arguments

The parties and amici submitted voluminous briefs of high quality, both before and after the remand hearing. We summarize their positions without repeating arguments already addressed. In short, defendant and amici endorse the Special Master's factual and scientific findings in their entirety. We have already discussed many of the State's responses to those findings. We now outline the parties' and amici's arguments as to the Appellate Division decision and the viability of the *Manson/Madison* framework in light of the record developed on remand.

The State argues vigorously against the Appellate Division's holding that a breach of the Attorney General Guidelines results in a presumption of impermissible suggestiveness. The State contends that such an approach would penalize the Attorney General for adopting Guidelines designed to improve identification practices, and reward defendants who intimidate witnesses. In this case, the State submits, two officers merely tried to reassure a threatened and reluctant witness; they did not attempt to influence the witness' selection of a particular photograph. The

State maintains that the Appellate Division's response would hamper this and like prosecutions and hinder policy makers in the future.

As to the current *Manson/Madison* framework, the State argues that there is insufficient evidence to warrant a change in the familiar procedure for evaluating eyewitness identification evidence. First, the State believes that the likelihood of misidentifications is overstated. *See, supra,* at section III.

Second, the State offers various arguments as to why the *Manson/Madison* framework is an adequate construct to evaluate identification evidence before trial: the right to a pretrial *Wade* hearing is already extensive and requires only "some showing" of impermissible suggestiveness; the *Manson/Madison* test is broad enough to incorporate all system and estimator variables; and the *Manson/Madison* test instructs judges to focus on confidence demonstrated at the time of confrontation, before any post-identification, confirmatory feedback.

Along with *Manson/Madison*, the State identifies other safeguards that protect against wrongful convictions: the Attorney General Guidelines; pretrial, open-file discovery, *see R.* 3:13–3; exclusion of highly prejudicial identifications that result from suggestive conduct or words by a private actor under *N.J.R.E.* 403; jury *voir dire;* numerous peremptory jury challenges; cross-examination; defense summations; and comprehensive jury instructions.

Because eyewitness identification science is probabilistic—meaning that it cannot determine if a particular identification is accurate—the State also argues that the legal system should continue to rely on jurors to assess the credibility of eyewitnesses. To guide juries, the State favors appropriate, flexible jury instructions. The State maintains that expert testimony is not advisable because the relevant subjects are not beyond the ken of the average juror.

Among other things, the State also rejects the use of the analogy that human memory is like trace evidence, which all the other parties advance.

Defendant embraces the decision of the Appellate Division and agrees that a violation of the Attorney General Guidelines should create a presumption of impermissible suggestiveness. With regard to the *Manson/Madison* test, defendant and amici argue that more than thirty years of scientific evidence undercut the assumptions underlying the Supreme Court's decision in *Manson.* They believe that for the following reasons, the *Manson/Madison* framework is insufficient to ensure defendants' due process rights to a fair trial: courts only consider the five reliability factors in *Manson/Madison* after finding suggestiveness, even though some of those factors may themselves be unreliable because of suggestive police behavior; the framework focuses only on police misconduct despite research that shows estimator variables and feedback from private actors can also affect reliability; its all-or-nothing remedy of suppression is too inflexible; it fails to provide jurors context and guidance; and it does not deter suggestive police procedures.

To correct those flaws, defendant and the ACDL initially proposed two alternative frameworks to replace *Manson/Madison.* Among other arguments, they analogized to *Miranda v. Arizona,* 384 *U.S.* 436, 86 *S.Ct.* 1602, 16 *L.Ed.*2d 694 (1966), and argued that eyewitness evidence should be excluded per se if an identification procedure violated the Attorney General Guidelines or if a judge found other evidence of suggestiveness.

Consistent with the Special Master's report, they now urge this Court to require a reliability hearing in every case in which the State intends to present identification evidence. At the hearing, they submit that a wide range of system and estimator variables would be relevant, and the State should bear the burden of establishing reliability. In addition, they agree with the Special Master that juries should receive expanded instructions that address specific variables and are tailored to the facts of the case.

The Innocence Project proposes a different scheme along the following lines: defendants would first have to allege that an identification was unreliable; the burden would then shift to the State to prove, in essence, that neither estimator nor system variables rendered the identification unreliable—to be accomplished through testimony of the eyewitness about the circumstances under which she saw the perpetrator, and proof from law enforcement about the identification procedure used; the burden would next shift back to the defendant to prove by a preponderance of evidence "that there exists a substantial probability of a mistaken identification"; and if the court does not suppress the evidence, defendant could file motions to seek to limit or redact identification testimony and present expert testimony at trial.

Notably, under the Innocence Project's approach, a violation of the Attorney General Guidelines would be a factor for the trial court—and juries—to consider; it would not lead to per se exclusion. At the admissibility hearing, the Innocence Project recommends that trial courts consider both system and estimator variables, and be required to make detailed findings about them; afterward, judges would be in a position before trial to tell the parties which instructions, if any, they plan to give the jury about relevant variables in the case.

Finally, the Innocence Project encourages this Court to adopt comprehensive jury instructions that are easy to understand, so that jurors can evaluate eyewitness evidence appropriately. The Innocence Project maintains that those instructions should be read to the jury both *before* an eyewitness' testimony and at the conclusion of the case. If at the end of trial the court doubts the accuracy of an identification, the Innocence Project argues that the judge should give a cautionary instruction to treat that evidence with great caution and distrust.

The State argues that the Innocent Project's proposal would invite an unnecessary pretrial fishing expedition in every criminal case involving eyewitness evidence. Instead, the State contends that the initial burden should remain on defendants to show some

evidence of suggestiveness, which the State claims is not an onerous threshold.

IX. Legal Conclusions

A. Scientific Evidence

We find that the scientific evidence presented is both reliable and useful. *See Moore, supra*, 188 *N.J.* at 206, 902 *A.*2d 1212. Despite arguments to the contrary, we agree with the Special Master that "[t]he science abundantly demonstrates the many vagaries of memory encoding, storage, and retrieval; the malleability of memory; the contaminating effects of extrinsic information; the influence of police interview techniques and identification procedures; and the many other factors that bear on the reliability of eyewitness identifications."

The research presented on remand is not only extensive, but as Dr. Monahan testified, it represents the "gold standard in terms of the applicability of social science research to the law." Experimental methods and findings have been tested and retested, subjected to scientific scrutiny through peer-reviewed journals, evaluated through the lens of meta-analyses, and replicated at times in real-world settings. As reflected above, consensus exists among the experts who testified on remand and within the broader research community. *See Chun, supra*, 194 *N.J.* at 91, 943 *A.*2d 114; *see also Frye, supra*, 293 *F.* at 1014.

Other courts have accepted eyewitness identification research pertaining to a number of the variables discussed. *See, e.g., United States v. Bartlett*, 567 *F.*3d 901, 906 (7th Cir.2009) (confidence-accuracy relationship and memory decay), *cert. denied*, —— *U.S.* ——, 130 *S.Ct.* 1137, 175 *L.Ed.*2d 971 (2010); *United States v. Brownlee*, 454 *F.*3d 131, 142–44 (3d Cir.2006) ("inherent unreliability" of eyewitness identifications and accuracy-confidence relationship); *United States v. Smith*, 621 *F.Supp.*2d 1207, 1215–17 (M.D.Ala.2009) (cross-racial identifications, impact of high stress, and feedback); *State v. Chapple*, 135 *Ariz.* 281, 660 *P.*2d 1208, 1220–22 (1983) (memory decay, stress, feedback, and confidence-

accuracy); *People v. McDonald*, 37 *Cal.*3d 351, 208 *Cal.Rptr.* 236, 690 *P.*2d 709, 718 (1984) ("The consistency of the results of [eyewitness identification] studies is impressive, and the courts can no longer remain oblivious to their implications for the administration of justice."), *overruled on other grounds by People v. Mendoza*, 23 *Cal.*4th 896, 98 *Cal.Rptr.*2d 431, 4 *P.*3d 265 (2000); *Benn v. United States*, 978 *A.*2d 1257, 1265–68 (D.C.2009) (citing expert consensus regarding system and estimator variables); *People v. LeGrand*, 8 *N.Y.*3d 449, 835 *N.Y.S.*2d 523, 867 *N.E.*2d 374, 380 (2007) (confidence-accuracy relationship, feedback, and confidence malleability); *State v. Copeland*, 226 *S.W.*3d 287, 299–300, 302 (Tenn.2007) (weapons effect, stress, cross-racial identification, age, and opportunity to view); *State v. Clopten*, 223 *P.*3d 1103, 1113 & n. 22 (Utah 2009) (citing with approval research on multiple system and estimator variables). *But see Marquez, supra*, 967 *A.*2d at 77 (finding scientific literature "is far from universal or even well established" and that "research is in great flux") (discussed *supra* at 243 n. 6, 27 *A.*3d at 893 n. 6).

This is not our first foray into the realm of eyewitness identification research and its applicability to the law. In *Cromedy*, this Court relied on numerous social scientific studies when we held that special jury instructions were needed in appropriate cases involving cross-racial identifications. *See Cromedy, supra*, 158 *N.J.* at 120–23, 131, 727 *A.*2d 457. We observed that "the empirical data ... provide[d] an appropriate frame of reference for requiring ... jury instructions." *Id.* at 132, 727 *A.*2d 457.

More recently in *Romero, supra*, this Court held that "there [was] insufficient data to support the conclusion that, as a matter of due process, people of the same race but different ethnicity ... require a *Cromedy* instruction whenever they are identified by someone of a different ethnicity." 191 *N.J.* at 71–72, 922 *A.*2d 693. Of the three studies the Court reviewed, one included a small number of participants and two "did not test for the reliability of identifications of Hispanics by non-Hispanics." *Id.* at 70–71, 922 *A.*2d 693. The Court distinguished the dearth of social scientific

research in the field of cross-ethnic bias from "the convincing social science data demonstrating the potential unreliability of cross-racial identifications." *See id.* at 69, 922 *A.*2d 693.

When social scientific experiments in the field of eyewitness identification produce "an impressive consistency in results," those results can constitute adequate data on which to base a ruling. *See Cromedy, supra*, 158 *N.J.* at 132, 727 *A.*2d 457. Thus, based on the testimony and ample record developed at the hearing, we recognize that a number of system and estimator variables can affect the reliability of eyewitness identifications. We recount those variables after considering the vitality of the *Manson/Madison* framework, a question we turn to now.

B. The *Manson/Madison* Test Needs to Be Revised

[6] When this Court adopted the framework outlined in *Manson*, it recognized that suggestive police procedures may "so irreparably 'taint[ ]' the out-of-court and in-court identifications" that a defendant is denied due process. *Madison, supra*, 109 *N.J.* at 239, 536 *A.*2d 254. To protect due process concerns, the *Manson* Court's two-part test rested on three assumptions: (1) that it would adequately measure the reliability of eyewitness testimony; (2) that the test's focus on suggestive police procedure would deter improper practices; and (3) that jurors would recognize and discount untrustworthy eyewitness testimony. *See Manson, supra*, 432 *U.S.* at 112–16, 97 *S.Ct.* at 2252–54, 53 *L.Ed.*2d at 152–55.

We remanded this case to determine whether those assumptions and other factors reflected in the two-part *Manson/Madison* test are still valid. We conclude from the hearing that they are not.

The hearing revealed that *Manson/Madison* does not adequately meet its stated goals: it does not provide a sufficient measure for reliability, it does not deter, and it overstates the jury's innate ability to evaluate eyewitness testimony.

First, under *Manson/Madison*, defendants must show that police procedures were "impermissibly suggestive" before courts can

consider estimator variables that also bear on reliability. *See Madison, supra*, 109 *N.J.* at 232, 536 *A.*2d 254. As a result, although evidence of relevant estimator variables tied to the *Neil v. Biggers* factors is routinely introduced at pretrial hearings, their effect is ignored unless there is a finding of impermissibly suggestive police conduct. In this case, for example, the testimony at the *Wade* hearing related principally to the lineup procedure. Because the court found that the procedure was not "impermissibly suggestive," details about the witness' use of drugs and alcohol, the dark lighting conditions, the presence of a weapon pointed at the witness' chest, and other estimator variables that affect reliability were not considered at the hearing. (They were explored later at trial.)

Second, under *Manson/Madison*, if a court finds that the police used impermissibly suggestive identification procedures, the trial judge then weighs the corrupting effect of the process against five "reliability" factors. *Id.* at 239–40, 536 *A.*2d 254. But three of those factors—the opportunity to view the crime, the witness' degree of attention, and the level of certainty at the time of the identification—rely on self-reporting by eyewitnesses; and research has shown that those reports can be skewed by the suggestive procedures themselves and thus may not be reliable. Self-reporting by eyewitnesses is an essential part of any investigation, but when reports are tainted by a suggestive process, they become poor measures in a balancing test designed to bar unreliable evidence.

Third, rather than act as a deterrent, the *Manson/Madison* test may unintentionally reward suggestive police practices. The irony of the current test is that the more suggestive the procedure, the greater the chance eyewitnesses will seem confident and report better viewing conditions. Courts in turn are encouraged to admit identifications based on criteria that have been tainted by the very suggestive practices the test aims to deter.

Fourth, the *Manson/Madison* test addresses only one option for questionable eyewitness identification evidence: suppression. Yet

few judges choose that ultimate sanction.[9] An all-or-nothing approach does not account for the complexities of eyewitness identification evidence.

Finally, *Manson/Madison* instructs courts that "the reliability determination is to be made from the totality of the circumstances in the particular case." *Id.* at 239, 536 *A.*2d 254. In practice, trial judges routinely use the test's five reliability factors as a checklist. The State maintains that courts may consider additional estimator variables. Even if that is correct, there is little guidance about which factors to consider, and courts and juries are often left to their own intuition to decide which estimator variables may be important and how they matter.

[7] As a result of those concerns, we now revise the State's framework for evaluating eyewitness identification evidence.[10]

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[9] The State correctly notes that there is no way to know the precise number of identifications that may have been suppressed at the trial court level, but even the State conceded at oral argument that suppression "does not happen often." We also note that with the exception of one case reversed on appeal, we have found no reported Appellate Division decision since 1977 that reversed a conviction because the trial court failed to suppress identification evidence. *State v. Ford*, 165 *N.J.Super.* 249, 398 *A.*2d 101 (1978), *rev'd on dissent*, 79 *N.J.* 136, 398 *A.*2d 95 (1979). (The Special Master found one unreported Appellate Division decision, which we do not cite consistent with *Rule* 1:36–3.)

[10] We have no authority, of course, to modify *Manson*. The expanded protections stem from the due process rights guaranteed under the State Constitution. *Compare N.J. Const.* art. I, § 1 ("All persons are by nature free and independent, and have certain natural and unalienable rights, among which are those of enjoying and defending life and liberty, of acquiring, possessing, and protecting property, and of pursuing and obtaining safety and happiness."), *with U.S. Const.* amend. XIV, § 1 ("No State shall ... deprive any person of life, liberty, or property, without due process of law."); *see Jamgochian v. N.J. State Parole Bd.*, 196 *N.J.* 222, 239, 952 *A.*2d 1060 (2008) ("[W]e have, from time to time, construed Article 1, Paragraph 1 [of the New Jersey Constitution] to provide more due process protections than those afforded under the United States Constitution."); *see also State v. Reid*, 194 *N.J.* 386, 396–97, 945 *A.*2d 26 (2008) (recognizing greater protection of individual rights under New Jersey Constitution).

C. Revised Framework

Remedying the problems with the current *Manson/Madison* test requires an approach that addresses its shortcomings: one that allows judges to consider all relevant factors that affect reliability in deciding whether an identification is admissible; that is not heavily weighted by factors that can be corrupted by suggestiveness; that promotes deterrence in a meaningful way; and that focuses on helping jurors both understand and evaluate the effects that various factors have on memory—because we recognize that most identifications will be admitted in evidence.

Two principal changes to the current system are needed to accomplish that: first, the revised framework should allow all relevant system *and* estimator variables to be explored and weighed at pretrial hearings when there is some actual evidence of suggestiveness; and second, courts should develop and use enhanced jury charges to help jurors evaluate eyewitness identification evidence.

The new framework also needs to be flexible enough to serve twin aims: to guarantee fair trials to defendants, who must have the tools necessary to defend themselves, and to protect the State's interest in presenting critical evidence at trial. With that in mind, we first outline the revised approach for evaluating identification evidence and then explain its details and the reasoning behind it.

[8] First, to obtain a pretrial hearing, a defendant has the initial burden of showing some evidence of suggestiveness that could lead to a mistaken identification. *See State v. Rodriquez, supra*, 264 *N.J.Super.* at 269, 624 *A.*2d 605; *State v. Ortiz, supra*, 203 *N.J.Super.* at 522, 497 *A.*2d 552; *cf. State v. Michaels*, 136 *N.J.* 299, 320, 642 *A.*2d 1372 (1994) (using same standard to trigger pretrial hearing to determine if child-victim's statements resulted from suggestive or coercive interview techniques). That evidence, in general, must be tied to a system—and not an

estimator—variable. *But see Chen, supra* (extending right to hearing for suggestive conduct by private actors).

[9] Second, the State must then offer proof to show that the proffered eyewitness identification is reliable—accounting for system and estimator variables—subject to the following: the court can end the hearing at any time if it finds from the testimony that defendant's threshold allegation of suggestiveness is groundless. We discuss this further below. *See infra* at 290–91, 27 *A.*3d at 920–21).

[10, 11] Third, the ultimate burden remains on the defendant to prove a very substantial likelihood of irreparable misidentification. *See Manson, supra*, 432 *U.S.* at 116, 97 *S.Ct.* at 2254, 53 *L.Ed.*2d at 155 (citing *Simmons, supra*, 390 *U.S.* at 384, 88 *S.Ct.* at 971, 19 *L.Ed.*2d at 1253); *Madison, supra*, 109 *N.J.* at 239, 536 *A.*2d 254 (same). To do so, a defendant can cross-examine eyewitnesses and police officials and present witnesses and other relevant evidence linked to system and estimator variables.[11]

[12] Fourth, if after weighing the evidence presented a court finds from the totality of the circumstances that defendant has demonstrated a very substantial likelihood of irreparable misidentification, the court should suppress the identification evidence. If the evidence is admitted, the court should provide appropriate, tailored jury instructions, as discussed further below.

[13] To evaluate whether there is evidence of suggestiveness to trigger a hearing, courts should consider the following non-exhaustive list of system variables:

1. *Blind Administration.* Was the lineup procedure performed double-blind? If double-blind testing was impractical, did the police use a technique like the "envelope method" described

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11 A defendant, of course, may make a tactical choice *not* to explore an estimator variable pretrial, in order to "save up" cross-examination for trial.

above, to ensure that the administrator had no knowledge of where the suspect appeared in the photo array or lineup?

2. *Pre-identification Instructions.* Did the administrator provide neutral, pre-identification instructions warning that the suspect may not be present in the lineup and that the witness should not feel compelled to make an identification?

3. *Lineup Construction.* Did the array or lineup contain only one suspect embedded among at least five innocent fillers? Did the suspect stand out from other members of the lineup?

4. *Feedback.* Did the witness receive any information or feedback, about the suspect or the crime, before, during, or after the identification procedure?

5. *Recording Confidence.* Did the administrator record the witness' statement of confidence immediately after the identification, before the possibility of any confirmatory feedback?

6. *Multiple Viewings.* Did the witness view the suspect more than once as part of multiple identification procedures? Did police use the same fillers more than once?

7. *Showups.* Did the police perform a showup more than two hours after an event? Did the police warn the witness that the suspect may not be the perpetrator and that the witness should not feel compelled to make an identification?

8. *Private Actors.* Did law enforcement elicit from the eyewitness whether he or she had spoken with anyone about the identification and, if so, what was discussed?

9. *Other Identifications Made.* Did the eyewitness initially make no choice or choose a different suspect or filler?

[14] The court should conduct a *Wade* hearing only if defendant offers some evidence of suggestiveness. If, however, at any time during the hearing the trial court concludes from the testimony that defendant's initial claim of suggestiveness is baseless, and if no other evidence of suggestiveness has been demonstrated by the evidence, the court may exercise its discretion to end the hearing. Under those circumstances, the court need not permit the defendant or require the State to elicit more evidence about estimator variables; that evidence would be reserved for the jury.

[15] By way of example, assume that a defendant claims an administrator confirmed an eyewitness' identification by telling the witness she did a "good job." That proffer would warrant a *Wade* hearing. Assume further that the administrator credibly denied any feedback, and the eyewitness did the same. If the trial court finds that the initial allegation is completely hollow, the judge can end the hearing absent any other evidence of suggestiveness. In other words, if no evidence of suggestiveness is left in the case, there is no need to explore estimator variables at the pretrial hearing. Also, trial courts always have the authority to direct the mode and order of proofs, and they may exercise that discretion to focus pretrial hearings as needed.

[16] If some actual proof of suggestiveness remains, courts should consider the above system variables as well as the following non-exhaustive list of estimator variables to evaluate the overall reliability of an identification and determine its admissibility:

1. *Stress.* Did the event involve a high level of stress?

2. *Weapon focus.* Was a visible weapon used during a crime of short duration?

3. *Duration.* How much time did the witness have to observe the event?

4. *Distance and Lighting.* How close were the witness and perpetrator? What were the lighting conditions at the time?

5. *Witness Characteristics.* Was the witness under the influence of alcohol or drugs? Was age a relevant factor under the circumstances of the case?

6. *Characteristics of Perpetrator.* Was the culprit wearing a disguise? Did the suspect have different facial features at the time of the identification?

7. *Memory decay.* How much time elapsed between the crime and the identification?

8. *Race-bias.* Does the case involve a cross-racial identification?

Some of the above estimator variables overlap with the five reliability factors outlined in *Neil v. Biggers, supra,* 409 *U.S.* at 199–200, 93 *S.Ct.* at 382, 34 *L.Ed.*2d at 411, which we nonetheless repeat:

9. *Opportunity to view the criminal at the time of the crime.*

10. *Degree of attention.*

11. *Accuracy of prior description of the criminal.*

12. *Level of certainty demonstrated at the confrontation.*

Did the witness express high confidence at the time of the identification before receiving any feedback or other information?

13. *The time between the crime and the confrontation.* (Encompassed fully by "memory decay" above.)

The above factors are not exclusive. Nor are they intended to be frozen in time. We recognize that scientific research relating to the reliability of eyewitness evidence is dynamic; the field is very different today than it was in 1977, and it will likely be quite different thirty years from now. By providing the above lists, we do not intend to hamstring police departments or limit them from improving practices. Likewise, we do not limit trial courts from reviewing evolving, substantial, and generally accepted scientific research. But to the extent the police undertake new practices, or courts either consider variables differently or entertain new ones, they must rely on reliable scientific evidence that is generally accepted by experts in the community. *See Chun, supra,* 194 *N.J.* at 91, 943 *A.*2d 114; *Moore, supra,* 188 *N.J.* at 206, 902 *A.*2d 1212; *Rubanick, supra,* 125 *N.J.* at 432, 593 *A.*2d 733.

We adopt this approach over the initial recommendation of defendant and the ACDL that any violation of the Attorney General Guidelines should require per se exclusion of the resulting

eyewitness identification. Although that approach might yield greater deterrence, it could also lead to the loss of a substantial amount of reliable evidence. We believe that the more flexible framework outlined above protects defendants' right to a fair trial at the same time it enables the State to meet its responsibility to ensure public safety.

D. Pretrial Hearing

As stated above, to obtain a pretrial hearing, a defendant must present some evidence of suggestiveness. Pretrial discovery, which this opinion has enhanced in certain areas, would reveal, for example, if a line-up did not include enough fillers, if those fillers did not resemble the suspect, or if a private actor spoke with the witness about the identification. Armed with that and similar information, defendants could request and receive a hearing.

The hearing would encompass system and estimator variables upon a showing of some suggestiveness that defendant can support. For various reasons, estimator variables would no longer be ignored in the court's analysis until it found that an identification procedure was impermissibly suggestive. First, broader hearings will provide more meaningful deterrence. To the extent officers wish to avoid a pretrial hearing, they must avoid acting in a suggestive manner. Second, more extensive hearings will address reliability with greater care and better reflect how memory works. Suggestiveness can certainly taint an identification, which justifies examining system variables. The same is true for estimator variables like high stress, weapon-focus, and own-race bias. Because both sets of factors can alter memory and affect eyewitness identifications, both should be explored pretrial in appropriate cases to reflect what *Manson* acknowledged: that "reliability is the linchpin in determining the admissibility of identification testimony." *Manson, supra,* 432 *U.S.* at 114, 97 *S.Ct.* at 2253, 53 *L.Ed.*2d at 154.

But concerns about estimator variables alone cannot trigger a pretrial hearing; only system variables would. This approach differs from the procedure endorsed by the Special Master and

proposed by defendant and amici, which would essentially require pretrial hearings in every case involving eyewitness identification evidence. Several reasons favor the approach we outline today.

First, we anticipate that eyewitness identification evidence will likely not be ruled inadmissible at pretrial hearings solely on account of estimator variables. For example, it is difficult to imagine that a trial judge would preclude a witness from testifying because the lighting was "too dark," the witness was "too distracted" by the presence of a weapon, or he or she was under "too much" stress while making an observation. How dark is too dark as a matter of law? How much is too much? What guideposts would a trial judge use in making those judgment calls? In all likelihood, the witness would be allowed to testify before a jury and face cross-examination designed to probe the weaknesses of her identification. Jurors would also have the benefit of enhanced instructions to evaluate that testimony—even when there is no evidence of suggestiveness in the case. As a result, a pretrial hearing triggered by, and focused on, estimator variables would likely not screen out identification evidence and would largely be duplicated at trial.

Second, courts cannot affect estimator variables; by definition, they relate to matters outside the control of law enforcement. More probing pretrial hearings about suggestive police procedures, though, can deter inappropriate police practices.

Third, as demonstrated above, suggestive behavior can distort various other factors that are weighed in assessing reliability. That warrants a greater pretrial focus on system variables.

Fourth, we are mindful of the practical impact of today's ruling. Because defendants will now be free to explore a broader range of estimator variables at pretrial hearings to assess the reliability of an identification, those hearings will become more intricate. They will routinely involve testimony from both the police and eyewitnesses, and that testimony will likely expand as more substantive areas are explored. Also, trial courts will retain discretion to allow expert testimony at pretrial hearings.

In 2009, trial courts in New Jersey conducted roughly 200 *Wade* hearings, according to the Administrative Office of the Courts. If estimator variables alone could trigger a hearing, that number might increase to nearly all cases in which eyewitness identification evidence plays a part. We have to measure that outcome in light of the following reality that the Special Master observed: judges rarely suppress eyewitness evidence at pretrial hearings. Therefore, to allow hearings in the majority of identification cases might overwhelm the system with little resulting benefit.

We do not suggest that it is acceptable to sacrifice a defendant's right to a fair trial for the sake of saving court resources, but when the likely outcome of a hearing is a more focused set of jury charges about estimator variables, not suppression, we question the need for hearings initiated only by estimator variables.

Appellate review does remain as a backstop to correct errors that may not be caught at or before trial, and the enhanced framework may provide a greater role in that regard in certain cases. If a reviewing court determines that identification evidence should not have been admitted in accordance with the above standards, it can reverse a conviction.

[17] We also note that trial courts should make factual findings at pretrial hearings about relevant system and estimator variables to lay the groundwork for proper jury charges and to facilitate meaningful appellate review.

Finally, we do not adopt the analogy between trace evidence and eyewitness identifications. To be sure, like traces of DNA or drops of blood, memories are part of our being. By necessity, though, the criminal justice system collects and evaluates trace evidence and eyewitness identification evidence differently. Unlike vials of blood, memories cannot be stored in evidence lockers. Instead, we must strive to avoid reinforcement and distortion of eyewitness memories from outside effects, and expose those influences when they are present. But we continue to rely on people as the conduits of their own memories, on attorneys to cross-

examine them, and on juries to assess the evidence presented. For that reason, we favor enhanced jury charges to help jurors perform that task.

E. Trial

[18] As is true today, juries will continue to hear about all relevant system and estimator variables at trial, through direct and cross-examination and arguments by counsel. In addition, when identification is at issue in a case, trial courts will continue to "provide[ ] appropriate guidelines to focus the jury's attention on how to analyze and consider the trustworthiness of eyewitness identification." *Cromedy, supra,* 158 *N.J.* at 128, 727 *A.*2d 457. Based on the record developed on remand, we direct that enhanced instructions be given to guide juries about the various factors that may affect the reliability of an identification in a particular case.

[19] Those instructions are to be included in the court's comprehensive jury charge at the close of evidence. In addition, instructions may be given during trial if warranted. For example, if evidence of heightened stress emerges during important testimony, a party may ask the court to instruct the jury midtrial about that variable and its effect on memory. Trial courts retain discretion to decide when to offer instructions.

As discussed earlier, the State maintains that many jurors, through their life experiences and intuition, generally understand how memory works. *See supra* at section VI.C. To the extent some jurors do not, the State argues that cross-examination, defense summations, the current jury charge, fellow jurors, and other safeguards can help correct misconceptions.

But we do not rely on jurors to divine rules themselves or glean them from cross-examination or summation. Even with matters that may be considered intuitive, courts provide focused jury instructions. For example, we remind jurors to scrutinize the testimony of a cooperating witness with care. *See Model Jury Charge (Criminal),* "Testimony of Cooperating Co–Defendant or

Witness" (2006). A simple reason underlies that approach: it is the court's obligation to help jurors evaluate evidence critically and objectively to ensure a fair trial.

Moreover, science reveals that memory and eyewitness identification evidence present certain complicated issues. *See supra* at section VI; *see also Cromedy, supra,* 158 *N.J.* at 120–23, 727 *A.*2d 457. In the past, we have responded by developing jury instructions consistent with accepted scientific findings. *See Cromedy, supra,* 158 *N.J.* at 132–33, 727 *A.*2d 457 (requiring cross-racial identification charge). We acted similarly in response to social science evidence about Battered Women's Syndrome and Child Sexual Abuse Accommodation Syndrome. *See State v. Townsend,* 186 *N.J.* 473, 500, 897 *A.*2d 316 (2006); *State v. P.H.,* 178 *N.J.* 378, 399–400, 840 *A.*2d 808 (2004). Ultimately, as the Special Master found, "[w]hether the science confirms commonsense views or dispels preconceived but not necessarily valid intuitions, it can properly and usefully be considered by both judges and jurors in making their assessments of eyewitness reliability." (*citing P.H., supra,* 178 *N.J.* at 395, 840 *A.*2d 808).

[20, 21] Expert testimony may also be introduced at trial, but only if otherwise appropriate. The *Rules of Evidence* permit expert testimony to "assist the trier of fact to understand the evidence or to determine a fact in issue." *N.J.R.E.* 702. Expert testimony is admissible if it meets three criteria:

> (1) the intended testimony must concern a subject matter that is beyond the ken of the average juror; (2) the field testified to must be at a state of the art such that an expert's testimony could be sufficiently reliable; and (3) the witness must have sufficient expertise to offer the intended testimony.
>
> [*State v. Jenewicz,* 193 *N.J.* 440, 454, 940 *A.*2d 269 (2008) (citations omitted).]

[22] Those criteria can be met in some cases by qualified experts seeking to testify about the import and effect of certain variables discussed in section VI. That said, experts may not opine on the credibility of a particular eyewitness. *See State v. Frisby,* 174 *N.J.* 583, 595, 811 *A.*2d 414 (2002); *see also State v. W.B.,* 205 *N.J.* 588, 613, 17 *A.*3d 187 (2011) (precluding "expert testimony about the statistical credibility of victim-witnesses").

Other federal and state courts have also recognized the usefulness of expert testimony relating to eyewitness identification. *See, e.g., Bartlett, supra*, 567 *F.*3d at 906; *Brownlee, supra*, 454 *F.*3d at 141–44; *Chapple, supra*, 660 *P.*2d at 1220; *McDonald, supra*, 208 *Cal.Rptr.* 236, 690 *P.*2d at 721; *Benn, supra*, 978 *A.*2d at 1270; *LeGrand, supra*, 835 *N.Y.S.*2d 523, 867 *N.E.*2d at 377–79; *Copeland, supra*, 226 *S.W.*3d at 300; *Clopten, supra*, 223 *P.*3d at 1108.

We anticipate, however, that with enhanced jury instructions, there will be less need for expert testimony. Jury charges offer a number of advantages: they are focused and concise, authoritative (in that juries hear them from the trial judge, not a witness called by one side), and cost-free; they avoid possible confusion to jurors created by dueling experts; and they eliminate the risk of an expert invading the jury's role or opining on an eyewitness' credibility. *See United States v. Hall*, 165 *F.*3d 1095, 1119–20 (7th Cir.) (Easterbrook, J., concurring), *cert. denied*, 527 *U.S.* 1029, 119 *S.Ct.* 2381, 144 *L.Ed.*2d 784 (1999). That said, there will be times when expert testimony will benefit the trier of fact. We leave to the trial court the decision whether to allow expert testimony in an individual case.

[23] Finally, in rare cases, judges may use their discretion to redact parts of identification testimony, consistent with *Rule* 403. For example, if an eyewitness' confidence was not properly recorded soon after an identification procedure, and evidence revealed that the witness received confirmatory feedback from the police or a co-witness, the court can bar potentially distorted and unduly prejudicial statements about the witness' level of confidence from being introduced at trial.

X. Revised Jury Instructions

To help implement this decision, we ask the Criminal Practice Committee and the Committee on Model Criminal Jury Charges to draft proposed revisions to the current charge on eyewitness identification and submit them to this Court for review before they are implemented. Specifically, we ask them to consider all of the system and estimator variables in section VI for which we have found scientific support that is generally accepted by experts, and to modify the current model charge accordingly.

Although we do not adopt the sample charges offered by the Innocence Project, we ask the Committees to examine their format and recommendations with care. We also invite the Attorney General, Public Defender, and ACDL to submit proposed charges and comments to the Committees.

[24] We add a substantive point about the current charge for cross-racial identification. In 1999, the Court in *Cromedy* directed that the charge be given "only when . . . identification is a critical issue in the case, and an eyewitness's cross-racial identification is not corroborated by other evidence giving it independent reliability." *Cromedy, supra*, 158 *N.J.* at 132, 727 *A.*2d 457. Since then, the additional research on own-race bias discussed in section VI.B.8, and the more complete record about eyewitness identification in general, justify giving the charge whenever cross-racial identification is in issue at trial.

Because of the widespread use the revised jury instructions will have in upcoming criminal trials, we ask the Committees to present proposed charges to the Court within ninety days.

XI. Application

We return to the facts of this case. After Womble, the eyewitness, informed the lineup administrator that he could not make an identification from the final two photos, the investigating officers intervened. They told Womble to focus and calm down, and assured him that the police would protect him from retaliation. "Just do what you have to do," they instructed. From that exchange, Womble could reasonably infer that there was an identification to be made, and that he would be protected if he made it. The officers conveyed that basic message to him as they encouraged him to make an identification.

The suggestive nature of the officers' comments entitled defendant to a pretrial hearing, and he received one. Applying the

Manson/Madison test, the trial judge admitted the evidence. We now remand to the trial court [12] for an expanded hearing consistent with the principles outlined in this decision. Defendant may probe all relevant system and estimator variables at the hearing. In addition to suggestiveness, the trial court should consider Womble's drug and alcohol use immediately before the confrontation, weapon focus, and lighting, among other relevant factors.

We express no view on the outcome of the hearing. If the trial court finds that the identification should not have been admitted, then the parties should present argument as to whether a new trial is needed. We do not review the record for harmless error only because the parties have not yet argued that issue. If Womble's identification was properly admitted, then defendant's conviction should be affirmed.

XII. Retroactivity Analysis

[25] Today's decision announces a new rule of law. For decades, trial courts have applied the *Manson/Madison* test to determine the admissibility of identification evidence. This opinion "breaks new ground" by modifying that framework. *See State v. Cummings*, 184 *N.J.* 84, 97, 875 *A.*2d 906 (2005) (quoting *State v. Knight*, 145 *N.J.* 233, 250–51, 678 *A.*2d 642 (1996)). Because the holding "is sufficiently novel and unanticipated," we must consider whether the new rule should be applied retroactively. *Knight, supra*, 145 *N.J.* at 251, 678 *A.*2d 642 (citing *State v. Lark*, 117 *N.J.* 331, 339, 567 *A.*2d 197 (1989)).

[26] When a decision sets forth a new rule, three factors are considered to determine whether to apply the rule retroactively: "(1) the purpose of the rule and whether it would be furthered by a retroactive application, (2) the degree of reliance placed on the old rule by those who administered it, and (3) the effect a retroactive application would have on the administration of justice." *Ibid.* (quoting *State v. Nash*, 64 *N.J.* 464, 471, 317 *A.*2d 689 (1974)).

[12] The Appellate Division directed that the matter be assigned to a different judge on remand. *See Henderson, supra*, 397 *N.J.Super.* at 416, 937 *A.*2d 988. That issue is moot because the original trial judge has retired.

[27] The factors are not of equal weight. The first factor—the purpose of the rule—"is often the pivotal consideration." *Ibid.* (quoting *State v. Burstein*, 85 *N.J.* 394, 406, 427 *A.*2d 525 (1981)). When, as here, "the new rule is designed to enhance the reliability of the factfinding process," courts consider "the likelihood of untrustworthy evidence being admitted under the old rule" and "whether the defendant had alternate ways of contesting the integrity of the evidence being introduced against him." *Burstein, supra*, 85 *N.J.* at 408, 427 *A.*2d 525.

[28, 29] The remaining two factors "come to the forefront" when the rule's purpose alone does not resolve the question of retroactivity. *Knight, supra*, 145 *N.J.* at 252, 678 *A.*2d 642. As to the second factor—the degree of reliance on the prior rule—the central consideration is "whether the old rule was administered in good faith reliance [on] then-prevailing constitutional norms." *State v. Purnell*, 161 *N.J.* 44, 55, 735 *A.*2d 513 (1999) (quotation marks and citations omitted; alteration in original). The third factor—the effect on the administration of justice—"recognizes that courts must not impose unjustified burdens on our criminal justice system." *Knight, supra*, 145 *N.J.* at 252, 678 *A.*2d 642. When the effect is unknown but undoubtedly substantial, that weighs in favor of limited retroactive application. *See State v. Bellamy*, 178 *N.J.* 127, 142–43, 835 *A.*2d 1231 (2003); *Purnell, supra*, 161 *N.J.* at 56, 735 *A.*2d 513; *State v. Czachor*, 82 *N.J.* 392, 409–10, 413 *A.*2d 593 (1980).

[30] The Court can apply a new rule in one of four ways: (1) "purely prospectively ... to cases in which the operative facts arise after the new rule has been announced"; (2) "in future cases and in the case in which the rule is announced, but not in any other litigation that is pending or has reached final judgment at the time the new rule is set forth"; (3) " 'pipeline retroactivity,' rendering it applicable in all future cases, the case in which the

rule is announced, and any cases still on direct appeal"; and (4) "complete retroactive effect ... to all cases." *Knight, supra*, 145 *N.J.* at 249, 678 *A.*2d 642 (internal citations omitted).

Applying the relevant factors, we first note that defendants have been able to challenge identification evidence under *Manson* and *Madison* and present arguments both before and at trial. Second, both the State and trial courts have, without question, relied in good faith on settled constitutional principles in applying the *Manson/Madison* test for many years. Last, there is no doubt that applying the new framework retroactively would affect an immense number of cases—far too many to tally—because eyewitness identifications are a staple of criminal trials. To reopen the vast group of cases decided over several decades, which relied not only on settled law but also on eyewitness memories that have long since faded, would "wreak havoc on the administration of justice." *State v. Dock*, 205 *N.J.* 237, 258, 15 *A.*3d 1 (2011).

We therefore apply today's ruling to future cases only, except for defendant Henderson (and defendant Cecilia Chen, the subject of a companion case filed today). As to future cases, today's ruling will take effect thirty days from the date this Court approves new model jury charges on eyewitness identification.

XIII. Conclusion

At the core of our system of criminal justice is the "twofold aim ... that guilt shall not escape or innocence suffer." *Berger v. United States*, 295 *U.S.* 78, 88, 55 *S.Ct.* 629, 633, 79 *L.Ed.* 1314, 1321 (1935). In the context of eyewitness identification evidence, that means that courts must carefully consider identification evidence before it is admitted to weed out unreliable identifications, and that juries must receive thorough instructions tailored to the facts of the case to be able to evaluate the identification evidence they hear.

To be effective, both tasks cannot rely on a dated, analytical framework that has lost some of its vitality. Rather, they must be informed by sound evidence on memory and eyewitness identification, which is generally accepted by the relevant scientific community. Only then can courts fulfill their obligation both to defendants and the public.

The modified framework to evaluate eyewitness identification evidence in this opinion attempts to meet that challenge. It relies on the developments of the last thirty years of science to promote fair trials and ensure the integrity of the judicial process.

The framework avoids bright-line rules that would lead to suppression of reliable evidence any time a law enforcement officer makes a mistake. Instead, it allows for a more complete exploration of system and estimator variables to preclude sufficiently unreliable identifications from being presented and to aid juries in weighing identification evidence.

We add that enhanced hearings are not meant to be the norm in every case. They will only be held when defendants allege some evidence of suggestiveness, and even then, courts retain the power to end a hearing if the testimony reveals that defendant's claim of suggestiveness is entirely baseless.

We also expect that in the vast majority of cases, identification evidence will likely be presented to the jury. The threshold for suppression remains high. Juries will therefore continue to determine the reliability of eyewitness identification evidence in most instances, with the benefit of cross-examination and appropriate jury instructions.

As a result, we believe that it is essential to educate jurors about factors that can lead to misidentifications, which in and of itself will promote deterrence. To that end, we have reviewed various system and estimator variables in detail, which should assist in the development of enhanced model jury charges. Using those charges in future criminal trials is a critical step in the overall scheme.

We thank Judge Gaulkin, the parties, and amici for their exemplary service in conducting and participating in a thorough,

useful remand hearing. They have provided a valuable service to the Court and the public.

XIV. Judgment

For the reasons set forth above, we modify and affirm the judgment of the Appellate Division, and modify the framework for assessing eyewitness identification evidence in criminal cases. We remand to the trial court for further proceedings consistent with this opinion.

For modification and affirmance/remandment—Chief Justice RABNER and Justices LONG, LaVECCHIA, ALBIN, RIVERA-SOTO and HOENS—6.

Opposed—None.

Appendix A: Remand Order

SUPREME COURT OF NEW JERSEY

A-8 September Term 2008

STATE OF NEW JERSEY, Plaintiff-Respondent,

v.

LARRY R. HENDERSON, Defendant-Appellant.

ORDER

This matter having come to the Court on a grant of certification, 195 *N.J.* 521, 950 A.2d 907, 908 (2008), to address whether evidence of eyewitness identification used against defendant was impermissibly suggestive and thus inadmissible under the two-part test applied in *Manson v. Brathwaite*, 432 *U.S.* 98, 97 *S.Ct.* 2243, 53 *L.Ed.*2d 140 (1977), and followed as a state law standard in *State v. Madison*, 109 *N.J.* 223, 232–33, 536 *A.*2d 254 (1988);

And that test requiring inquiry into, first, whether the identification procedure was impermissibly suggestive, and second, whether the procedure was so suggestive as to result in a very

Appendix A: Remand Order—Continued

substantial likelihood of irreparable misidentification, *Madison, supra*, 109 *N.J.* at 232, 536 *A.*2d 254;

And the second inquiry requiring consideration of five factors: (1) the opportunity of the witness to view the suspect at the time of the crime; (2) the witness's degree of attention; (3) the accuracy of the witness's prior description of the suspect; (4) the level of certainty demonstrated at the confrontation; and (5) the time between the crime and the confrontation, *id.* at 239–40, 536 *A.*2d 254;

And the Court having granted leave to appear as amicus curiae to the Association of Criminal Defense Lawyers of New Jersey and The Innocence Project;

And the parties and amici having submitted arguments about the reliability of identification evidence and the current framework for evaluating the admissibility of such evidence;

And the Court having noted previously that, based on recent empirical research, "[m]isidentification is widely recognized as the single greatest cause of wrongful convictions in this country," *State v. Delgado*, 188 *N.J.* 48, 60–61 & n. 6, 902 *A.*2d 888 (2006);

And the Court having further recognized that in 2001 the New Jersey Attorney General established Guidelines for Preparing and Conducting Photo and Live Lineup Identification Procedures to reduce suggestive eyewitness identifications in this state, *State v. Herrera*, 187 *N.J.* 493, 502 n. 2, 511–20, 902 *A.*2d 177 (2006);

And the parties and amici having raised and argued questions about the possible shortcomings of the *Manson/Madison* test in light of more recent scientific research;

And this Court having determined on prior occasions that when resolution of a critical issue depends on a full and complete record the Court should await, before decision, the development of such a record, *State v. Moore*, 180 *N.J.* 459, 460–61, 852 *A.*2d 1073 (2004); *Am. Trucking Ass'ns v. State*, 164 *N.J.* 183, 183–84, 752 *A.*2d 1286 (2000); *see also Herrera, supra*, 187 *N.J.* at 504, 902 *A.*2d 177;

Appendix A: Remand Order—Continued

And the Court having heard argument of the parties and having concluded that an inadequate factual record exists on which it can test the current validity of our state law standards on the admissibility of eyewitness identification;

And the Court having concluded that, until such a record is established, the Court should not address the question of the admissibility of the eyewitness identification presented in this case;

And for good cause appearing;

It is ORDERED that the matter is remanded summarily to the trial court for a plenary hearing to consider and decide whether the assumptions and other factors reflected in the two-part *Manson/Madison* test, as well as the five factors outlined in those cases to determine reliability, remain valid and appropriate in light of recent scientific and other evidence; and it is further

ORDERED that, subject to any rulings by the trial court regarding the proofs to be submitted on remand, defendant and the State each shall present before that court testimony and other proof, including expert testimony, in support of their respective positions; and it is further

ORDERED that the Attorney General of New Jersey and the Office of the Public Defender, as well as amici, The Association of Criminal Defense Lawyers of New Jersey and The Innocence Project, shall each participate in developing the aforesaid record; and it is further

ORDERED that on the entry of the trial court's opinion on remand, the parties and amici shall each have twenty-one days within which to file briefs and appendices in this Court and five days thereafter to file any responding briefs; and it is further

ORDERED that on the completion of the briefing, the Court will determine whether additional oral arguments are required; and it is further

ORDERED that jurisdiction is otherwise retained.

Appendix A: Remand Order—Continued

WITNESS, the Honorable Stuart Rabner, Chief Justice, at Trenton, this 26th day of February, 2009.

/s/ Stephen W. Townsend
CLERK OF THE SUPREME COURT

Chief Justice RABNER and Justices LONG, LaVECCHIA, ALBIN, WALLACE, RIVERA-SOTO, and HOENS join in the Court's Order.

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27 A.3d 930

STATE OF NEW JERSEY, PLAINTIFF-APPELLANT, v. CECILIA X. CHEN, DEFENDANT-RESPONDENT.

Argued September 29, 2009—Decided August 24, 2011.

SYNOPSIS

Background: Defendant was convicted in the Superior Court, Law Division, Monmouth County, of attempted murder. Defendant appealed. The Superior Court, Appellate Division, 402 N.J.Super. 62, 952 A.2d 1094, remanded. Certification was granted.

Holding: The Supreme Court, Rabner, C.J., held that words and actions of victim's husband were so highly suggestive, with respect to victim's pretrial identification of defendant, who was husband's former girlfriend, that preliminary hearing was warranted to assess the admissibility of victim's identification evidence.

Judgment of Appellate Division affirmed as modified; remanded.

Opinion, 207 N.J. 404, 25 A.3d 256, withdrawn.

See also 208 N.J. 208, 27 A.3d 872, 2011 WL 3715028.

IN THE SUPREME COURT OF THE STATE OF KANSAS

No. 99,163

STATE OF KANSAS,
Appellee,

v.

MICHAEL MITCHELL,
Appellant.

SYLLABUS BY THE COURT

1.

Once a district court has determined that an eyewitness identification is admissible evidence, the jury decides whether that identification is reliable enough to support the defendant's conviction.

2.

In any criminal action in which an eyewitness identification is a critical part of the prosecution's case and there is a serious question about the identification's reliability, a cautionary instruction should be given advising the jury about the factors to consider in weighing the credibility of that eyewitness identification testimony.

3.

A cautionary instruction, coupled with vigorous cross-examination and effective assistance of defense counsel, affords the defendant means to persuade the jury about the shortcomings of any eyewitness identification evidence.

4.

Jurors should not be instructed that the degree of certainty expressed by the witness at the time of an identification of the defendant is a factor they should weigh when evaluating the reliability of that eyewitness identification testimony. As worded in PIK Crim. 3d 52.20, this factor prompts the jury to conclude that an eyewitness identification evidence is more reliable when the witness expresses greater certainty. PIK Crim. 3d 52.20 should be modified accordingly.

5.

For an appellate court to determine whether the use of the degree of certainty factor in PIK Crim. 3d 52.20 could have reasonably misled the jury, it must: (a) decide whether an expression of certainty by the eyewitness was communicated to the jury and, if so, (b) the nature and extent of the certainty expressed. If the court determines there was no degree of certainty conveyed by the eyewitness when making the identification, the jury could not have been misled by including this factor in the jury instructions.

6.

If an appellate court determines an eyewitness expressed a degree of certainty when making an identification of the defendant, the court next must determine: (a) whether the identification was a critical aspect of the prosecution's case and (b) whether there is any serious question about the reliability of the witness' identification.

7.

The cautionary eyewitness identification instruction is not required when the witness was personally familiar with the defendant because there is not a substantial likelihood of misidentification.

8.

Under the facts of this case, the normal concerns about eyewitness identification reliability, as discussed in the caselaw and scientific literature, are not present because the eyewitness knew the defendant.

Review of the judgment of the Court of Appeals in an unpublished opinion filed February 6, 2009. Appeal from Sedgwick District Court; JOSEPH BRIBIESCA, judge. Opinion filed May 11, 2012. Judgment of the Court of Appeals affirming the district court is affirmed. Judgment of the district court is affirmed.

Ryan J. Eddinger, of Kansas Appellate Defender Office, argued the cause and was on the brief for appellant.

Julie A. Koon, assistant district attorney, argued the cause, and *Nola Tedesco Foulston*, district attorney, and *Steve Six*, attorney general, were with her on the brief for appellee.

The opinion of the court was delivered by

BILES, J.: Michael Mitchell was convicted of aggravated robbery based entirely on the victim's eyewitness identification. The victim picked Mitchell out of a photo lineup a few days after the robbery and indicated 100 percent certainty that Mitchell was the assailant. At trial, the victim testified he had known Mitchell for several months before the attack but did not know his name.

On appeal, Mitchell argues the district court should have deleted the degree of certainty factor from those listed in PIK Crim. 3d 52.20, which is the cautionary eyewitness identification instruction. Mitchell contends this factor improperly focuses the jury on expressions of certainty when evaluating the accuracy of eyewitness identifications. Mitchell refers us to scientific research concluding that witness certainty

is an untrustworthy predictor of accuracy, but he concedes there is conflicting research on the subject.

We hold that the witness certainty factor in PIK Crim. 3d 52.20 should no longer be used because it prompts the jury to conclude that eyewitness identification evidence is more reliable when the witness expresses greater certainty. But we affirm Mitchell's conviction because the instruction could not have misled the jury since the eyewitness knew his attacker and was subjected to a thorough cross-examination.

FACTUAL AND PROCEDURAL BACKGROUND

In November 2006, a man kicked in the door to Mark Trevino's apartment, entered, and asked, "Where's the money?" Trevino testified he tried to run outside but was punched in his left eye and head, causing him to fall to the ground. The assailant then removed about $70 from Trevino's pocket and ran away.

When police arrived, Trevino described his attacker as a 6-foot tall, approximately 270 pound, African-American male with short hair and a goatee. Trevino said he knew his attacker because they had met several months before and the man had stayed at Trevino's apartment. But Trevino said he did not know the man's name.

In the course of investigation, officers received information causing them to suspect Trevino and Mitchell had a prior confrontation at the same apartment complex. And since the physical description Trevino gave of his attacker matched the description the police had of Mitchell from the prior confrontation, the investigating officer created a photo lineup with pictures of six men, placing Mitchell in the third position. At trial, the officer testified about his efforts to select individuals with similar physical characteristics when creating the lineup.

Six days after the robbery, Trevino was shown the photo lineup. He quickly pointed to Mitchell's picture and stated, "[T]hat's him." The detective instructed Trevino to write a comment on the lineup, and Trevino wrote "#3 is 100% the person who robbed me." He also circled Mitchell's photograph and wrote his initials next to it. Mitchell was charged with aggravated robbery based on Trevino's identification. Mitchell denied the charge.

Before trial, Mitchell filed a motion to suppress Trevino's eyewitness identification and statement that he was 100 percent certain Mitchell was his assailant. Mitchell argued the identification was unreliable because Trevino had an incentive to focus the investigation on Mitchell, did not have much opportunity to observe his attacker, and obviously did not know Mitchell well because Trevino could not recall Mitchell's name, despite Trevino's claims Mitchell previously spent the night in Trevino's apartment. The district court denied the motion, and the photo lineup was admitted at trial without further objection.

Mitchell also objected to issuing the eyewitness identification instruction from our state's pattern jury instructions. PIK Crim. 3d 52.20 directs jurors to determine whether any of seven listed factors exist and, if so, to then decide "the extent to which they would affect accuracy of identification by an eyewitness." Mitchell specifically sought deletion of the sixth factor in PIK Crim. 3d 52.20, which states: "The degree of certainty demonstrated by the witness at the time of any identification of the accused."

Mitchell argued there is no meaningful correlation between witness certainty and the identification's accuracy, so drawing the jury's attention to it was misleading. He also contended that this court rejected the witness certainty factor in *State v. Hunt*, 275 Kan. 811, 69 P.3d 571 (2003), which is one in a series of cases considering what criteria the

district court should consider when determining whether an eyewitness identification is admissible. The trial court overruled Mitchell's objection and issued PIK Crim. 3d 52.20 without modification.

At trial, Trevino testified that he met Mitchell at a bar and had seen him at least four other times. Trevino admitted that he bought cocaine from Mitchell on at least two of those occasions, and Mitchell stayed the night with Trevino once after they both drank and used drugs. Trevino also testified that Mitchell had tried to pass off a baking soda mixture as more cocaine, but that after Trevino used the mixture, he refused to pay for it. Trevino said Mitchell believed he owed him for the mixture, and this became a subject of disagreement between them.

The photo lineup was admitted into evidence without a timely trial objection. Trevino also identified Mitchell in court as his attacker and testified that he had no doubt Mitchell was the person who robbed him. Mitchell was convicted of aggravated robbery and appealed to the Court of Appeals. He argued the district court should have suppressed the photo lineup and erred by issuing the cautionary eyewitness identification instruction from PIK Crim. 3d 52.20 without modification.

The Court of Appeals looked past Mitchell's failure to preserve his objection at trial about admission of the photo lineup. It held the issue's consideration was required to serve the ends of justice and prevent denial of a fundamental right. On the merits, the panel held the eyewitness identification evidence was admissible because the photo lineup procedure was not "unduly" suggestive. *State v. Mitchell*, No. 99,163, 2009 WL 311814, at *3-4 (Kan. App. 2009) (unpublished opinion) ("[A]ll of the photos fit the general description Trevino had provided and were reasonably similar in appearance. The detective advised Trevino both orally and in writing, that he shouldn't guess and shouldn't assume that the person who had robbed him was included in the photos.").

We pause to note that the panel supported its holding on the photo lineup issue by citing *State v. Corbett*, 281 Kan. 294, 304-05, 130 P.3d 1179 (2006), which uses the term "impermissibly suggestive" in describing the standard for reviewing police eyewitness identification procedures. But see *State v. Reed*, 45 Kan. App. 2d 372, 379, 247 P.3d 1074, *rev. denied* 292 Kan. 968 (2011) (noting Kansas appellate courts frequently use the terms "unnecessarily suggestive" and "impermissibly suggestive" interchangeably and suggesting the term "unnecessarily suggestive" more accurately describes the *Corbett* standard). The Court of Appeals in Mitchell's case used yet another term: unduly suggestive. This, at the least, hints strongly that uniformity in the terminology may be needed. But the photo lineup issue is not before this court, so that opportunity must wait.

As to the PIK eyewitness identification instruction, the Court of Appeals commented that this court's caselaw had not clearly addressed whether, and under what circumstances, the jury should be instructed to consider an eyewitness' expressed degree of certainty. But it declined to consider whether the certainty factor was improperly included in PIK Crim. 3d 52.20 because the court held there was no real possibility any error misled the jury because Trevino knew Mitchell before the aggravated robbery occurred. *Mitchell*, 2009 WL 311814, at *2.

Mitchell filed a petition for review with this court. We granted review only on the jury instruction issue. Jurisdiction arises under K.S.A. 20-3018(b) (review of Court of Appeals' decision).

ANALYSIS

Our caselaw recognizes that eyewitness identifications can be unreliable and result in wrongful convictions, causing some of the most tragic miscarriages of justice. This is a

subject of numerous legal articles and scientific research, several of which conclude that the "whole process . . . calls for caution." See *State v. Warren*, 230 Kan. 385, 390-92, 635 P.2d 1236 (1981); see also *Manson v. Brathwaite*, 432 U.S. 98, 112, 97 S. Ct. 2243, 53 L. Ed. 2d 140 (1977) (noting prospects for unreliability when an eyewitness testifies about an encounter with a total stranger under emergency circumstances or emotional stress, coupled with the ease of distortion by circumstances or later police actions); and *United States v. Wade*, 388 U.S. 218, 228, 87 S. Ct. 1926, 18 L. Ed. 2d 1149 (1967) (recognizing "the proverbially untrustworthy nature" of eyewitness evidence).

This acknowledged need for caution has led our court to recognize the necessity for procedural safeguards against wrongful convictions based on unreliable eyewitness identifications. These include: (1) The trial court's authority to suppress eyewitness testimony if the identification procedure rendered the identification unreliable; (2) defense counsel's cross-examination of the witness and arguments about the identification's reliability; and (3) use of a cautionary instruction whenever eyewitness identification is a critical part of the prosecution's case and there are serious questions about the identification's reliability. *Warren*, 230 Kan. at 395, 397. See also *Perry v. New Hampshire*, 565 U.S. __, 132 S. Ct. 716, 729, 181 L. Ed. 2d 694 (2012) ("The constitutional requirement that the government prove the defendant's guilt beyond a reasonable doubt also impedes convictions based on dubious identification evidence.").

In Mitchell's case, these safeguards were in place. Mitchell's trial counsel sought suppression of Trevino's identification of Mitchell claiming it was unreliable, so the issue was directly before the district court. Mitchell's counsel also engaged in extensive cross-examination of Trevino at trial in order to cast doubt on the identification. And with that advance groundwork, the cautionary eyewitness identification instruction from PIK Crim. 3d 52.20 was issued without modification. That PIK instruction reads:

"The law places the burden upon the State to identify the defendant. The law does not require the defendant to prove (he) (she) has been wrongly identified. In weighing the reliability of eyewitness identification testimony, you first should determine whether any of the following factors existed and, if so, the extent to which they would affect accuracy of identification by an eyewitness. Factors you may consider are:

(1) The opportunity the witness had to observe. This includes any physical condition which could affect the ability of the witness to observe, the length of the time of observation, and any limitations on observation like an obstruction or poor lighting;
(2) The emotional state of the witness at the time including that which might be caused by the use of a weapon or a threat of violence;
(3) Whether the witness had observed the defendant on earlier occasions;
(4) Whether a significant amount of time elapsed between the crime charged and any later identification;
(5) Whether the witness ever failed to identify the defendant or made any inconsistent identification;
(6) *The degree of certainty demonstrated by the witness at the time of any identification of the accused*; and
(7) Whether there are any other circumstances that may have affected the accuracy of the eyewitness identification." (Emphasis added.) PIK Crim. 3d 52.20.

Mitchell argues the district court committed reversible error when it denied his request to delete the sixth factor pertaining to witness certainty. The State argues the district court correctly issued the PIK instruction.

Standard of Review

Because Mitchell objected to the instruction at trial, this court examines whether it properly and fairly stated the law as applied to the facts and could not have reasonably misled the jury. In making this determination, appellate courts consider the instructions as

a whole. *State v. Appleby*, 289 Kan. 1017, 1059, 221 P.3d 525 (2009). And we note the use of PIK instructions is not required, but it is strongly recommended unless the facts in a particular case require modification. In those instances, the trial court should not hesitate to make alterations. *State v. Tully*, 293 Kan. 176, 197, 262 P.3d 314 (2011).

Witness Certainty When Considering Suppression of the Identification

First, Mitchell relies on our decision in *Hunt* to argue that trial courts should no longer consider witness certainty when determining whether to suppress eyewitness identification evidence. Therefore, he reasons, the jury should not have been instructed to consider witness certainty. The State responds that Mitchell misconstrues this court's identification suppression caselaw and contends witness certainty is still a valid factor in the jury's analysis when considering the accuracy of an eyewitness identification. To decide the issue, we must revisit the standards applicable to suppression of eyewitness testimony, even though our concern in this case is limited to the jury instruction.

District courts follow a two-step process when determining whether an eyewitness identification is admissible evidence. The first step examines whether the police procedure used to obtain the identification was impermissibly or unnecessarily suggestive. If so, trial courts move to the second step and consider whether there was a substantial likelihood of misidentification under the totality of the circumstances surrounding it. *Corbett*, 281 Kan. at 304.

Initially, Kansas trial courts looked to five criteria to determine whether there was a substantial likelihood for misidentification: (1) the witness' opportunity to view the criminal at the time of the crime; (2) the witness' degree of attention; (3) the accuracy of the witness' prior description of the criminal; (4) the level of certainty demonstrated by the witness at the confrontation; and (5) the length of time between the crime and the

confrontation. See, *e.g.*, *State v. Ponds*, 227 Kan. 627, 630, 608 P.2d 946 (1980); *State v. Deffenbaugh*, 217 Kan. 469, 471, 536 P.2d 1030 (1975). These are commonly called the *Biggers* factors because they derived from the United States Supreme Court's decision in *Neil v. Biggers*, 409 U.S. 188, 199-200, 93 S. Ct. 375, 34 L. Ed. 2d 401 (1972).

In *Hunt*, this court "refined" the *Biggers* factors by approving criteria recognized by the Utah Supreme Court in *State v. Ramirez*, 817 P.2d 774, 781 (Utah 1991). *Hunt*, 275 Kan. at 817-18. The *Hunt* court held that the *Ramirez* factors improved the district court's analysis of whether the identification was reliable, but it emphasized that acceptance of the *Ramirez* model should not be considered a rejection of the *Biggers* factors. *Hunt*, 275 Kan. at 818.

But confusion occurred in later cases because *Hunt* omitted the degree of certainty factor approved earlier in *Biggers*, which to some implied disapproval. And this interpretation was bolstered by the fact that the Utah Supreme Court had also omitted the witness certainty factor after holding certainty was a poor predictor of accuracy. *Ramirez*, 817 P.2d at 781 ("[W]e criticized this factor and essentially rejected it as an indicator of an identification's reliability."). But another explanation for our failure to address the factor could have been that no certainty evidence was admitted at Hunt's trial, so there was no need for that factor to appear in the analysis. Regardless, this court's next decision did not clarify whether trial courts should continue considering witness certainty when determining whether an eyewitness identification would be admissible.

In *State v. Trammell*, 278 Kan. 265, 92 P.3d 1101 (2004), three witnesses identified the defendant from various photographic lineups, and the same eyewitness identification instruction at issue in Mitchell's case was submitted to the jury. Trammell argued for the first time on appeal that PIK Crim. 3d 52.20 was erroneous because it included the degree of certainty factor, citing *Hunt*. This court declined to review the jury

instruction issue, but we noted *Hunt* did not support Trammell's claim that the eyewitness instruction was erroneous because *Hunt* did not address the validity of PIK Crim. 3d 52.20. *Trammell*, 278 Kan. at 269-70.This dictum hinted that the factors for determining admissibility may be different than the factors that should be included in the cautionary jury instruction.

The *Trammell* court did reach whether the trial court should have excluded the eyewitness identification. It described *Hunt* as "adding the *Ramirez* factors to the *Biggers* factors," which implied the certainty factor remained valid. *Trammell*, 278 Kan. at 270. But that issue was not expressly clarified until our *Corbett* decision.

In *Corbett*, this court listed eight factors for trial courts to consider in the second step of the identification suppression analysis: (1) The witness' opportunity to view the criminal at the time of the crime; (2) The witness' degree of attention; (3) The accuracy of the witness' prior description; (4) *The level of certainty demonstrated by the witness at the confrontation*; (5) The length of time between the crime and the confrontation; (6) The witness' capacity to observe the event, including his or her mental and physical acuity; (7) The spontaneity and consistency of the witness' identification and the susceptibility to suggestion; and (8) The nature of the event being observed and the likelihood that the witness would perceive, remember, and relate it correctly. 281 Kan. at 305. These eight factors from *Corbett* have been cited in later cases involving district court identification suppression rulings. See, *e.g.*, *State v. Reed*, 45 Kan. App. 2d 372, 378-79, 247 P.3d 1074, *rev. denied* 292 Kan. 968 (2011); *State v. Galyardt*, 44 Kan. App. 2d 729, 735-38, 240 P.3d 619 (2010), *pet. for rev.* filed October 21, 2010 (pending).

Relying on *Corbett*, we find there is no merit to Mitchell's argument that Kansas courts no longer consider the witness certainty factor when determining if eyewitness identifications are admissible evidence. Therefore, his argument that the jury instruction

should have been modified to conform to the same standard applied by district courts when deciding a suppression motion is wrong.

But this finding does not answer the next question presented—whether the jury should have been instructed to consider witness certainty. And to decide this, we must focus on whether the language of the instruction misled the jury.

The Cautionary Jury Instruction's Continued Viability

In *Hunt*, this court commented that "juries usually attach great weight to eyewitness identifications, while others involved in the trial know and other disciplines have documented that such identification is often unreliable." 275 Kan. at 818. See also Handberg, *Expert Testimony of Eyewitness Identification: A New Pair of Glasses for the Jury*, 32 Am. Crim. L. Rev. 1013, 1035 (1995) (finding that what is known about eyewitness identification is not "'within the jury's common knowledge.'"). This court has held that a proper cautionary instruction, which sets forth factors for the jury to consider, helps to alleviate concerns about eyewitness identifications. *Warren*, 230 Kan. at 395; see also *Perry*, 132 S. Ct. at 728-29 (holding juries traditionally determine whether evidence is reliable and approving eyewitness-specific jury instructions).

We continue to believe the best approach is to leave the reliability determination to the jury and allow the parties to challenge the eyewitness identification testimony at trial as the circumstances warrant. But this conclusion does not distract from the importance of a properly worded cautionary instruction that adequately informs the jury of the perils of eyewitness identifications and suggests criteria for its deliberative process when a trial court has found an eyewitness identification is a critical part of the prosecution's case and there is serious question about that identification's reliability. Under these circumstances, a form of PIK Crim. 3d 52.20 should continue to be given.

See *State v. Mann*, 274 Kan 670, 677-79, 56 P.3d 212 (2002); *State v. Harris*, 266 Kan. 270, 277-78, 970 P.2d 519 (1998); *State v. Willis*, 240 Kan. 580, 583-86, 731 P.2d 287 (1987); *Warren*, 230 Kan. at 390-92.

But affirming the general need for instruction when the circumstances warrant does not answer the specific question presented in this appeal—whether it is appropriate to instruct the jury to consider the degree of certainty demonstrated by the witness at the time the witness identifies the defendant. Mitchell argues PIK Crim. 3d 52.20 does not provide adequate safeguards because the degree of certainty factor has been criticized as scientifically unsound as a correlate to the identification's accuracy. We agree in part, but we focus more on the actual language in the instruction, rather than the scientific research.

The Utah Supreme Court was the first court to criticize eyewitness certainty evidence in *State v. Long*, 721 P.2d 483 (Utah 1986). The *Long* court held:

> "Research has also undermined the common notion that the confidence with which an individual makes an identification is a valid indicator of the accuracy of the recollection. K. Deffenbacher, *Eyewitness Accuracy and Confidence: Can We Infer Anything About Their Relationship*? 4 Law and Human Behavior 243 (1980); Lindsay, Wells, Rumpel, *Can People Detect Eyewitness-Identification Accuracy Within and Across Situations*?, 66 J. Applied Psych. 79, 80-82 (1981); [Citation omitted.] In fact, the accuracy of an identification is, at times, inversely related to the confidence with which it is made. Buckhout, [*Eyewitness Testimony*, 15 Jurimetrics J. 171,] at 184 [(1975) (reprinted from 231 Scientific American 23 (Dec. 1974)]." 721 P.2d at 490.

Almost 20 years after *Long*, the Connecticut Supreme Court conducted its own review of scientific studies and reached a different conclusion. *State v. Ledbetter*, 275 Conn. 534, 569, 881 A.2d 290 (2005). The *Ledbetter* court noted the studies it reviewed

had reached differing conclusions about the degree of certainty and summarized the results as follows:

> "[S]ome studies showed no correlation, or even a negative correlation between witness confidence and the accuracy of the identification, while others showed a positive correlation. See G. Wells, M. Small & S. Penrod et al., [*Eyewitness Identification Procedures: Recommendations for Lineups and Photospreads*], 22 Law & Hum. Behav. [603, 622 (1998)]; M. Leippe, [*Effects of Integrative Memorial and Cognitive Processes on the Correspondence of Eyewitness Accuracy and Confidence*], 4 Law & Hum. Behav. 261 [(1980)]. Moreover, the studies suggest that the correlation may be stronger for witnesses who identify a subject during the identification procedure than for those who determine that the perpetrator is not present. See G. Wells, M. Small & S. Penrod et al., [22 Law & Hum. Behav. at] 623; S. Sporer, [*Eyewitness Identification Accuracy, Confidence, and Decision Times in Simultaneous and Sequential Lineups*], 78 J. Applied Psychol. 22, 23 [(1993)]. Research also suggests 'that the certainty—accuracy relation is higher under good viewing conditions than under poor viewing conditions.' A. Bradfield, G. Wells & E. Olson, [*The Damaging Effect of Confirming Feedback on the Relation Between Eyewitness Certainty and Identification Accuracy*], 87 J. Applied Psychol. 112, 114 [(2002)]. These results have led some researchers to 'propose that the relation between eyewitness identification certainty and accuracy is not a single value but instead is a family of possible values.' [87 J. Applied Psychol. at] 112." 275 Conn. at 568-69.

Notably, most studies cited by *Ledbetter* that found a positive relationship between accuracy and certainty were published after the Utah court's *Long* decision. But given the plethora of studies done on this issue and the nuances to each, it is difficult to derive many overarching principles from them, and the parties have not argued the merits of any particular study one way or the other.

In the end, we agree with the Connecticut Supreme Court that the available studies are not definitive on the question whether there is a significant correlation between

certainty and accuracy. But we are also mindful that the literature suggests certainty may not always be as reliable an indicator of accuracy.

Given the complicated nature of this inquiry and the heightened concern surrounding this factor, we hold that the current language in PIK Crim. 3d 52.20 encourages jurors to give more weight to identifications by a certain witness than an uncertain one and does nothing to inform the jury that certainty evidence may be unreliable. The instruction directs jurors to consider whether a witness has expressed a degree of certainty about the identification and, if so, the extent to which that factor would affect accuracy of the identification. As worded, this factor prompts the jury to conclude that an eyewitness identification is more reliable when the witness expresses greater certainty, which places undue weight on eyewitness certainty evidence. Therefore, we hold it is error to instruct the jury on the degree of certainty factor, and we discourage its future use.

This holding requires us to determine whether the use of the degree of certainty factor could have reasonably misled the jury in Mitchell's case. Such inquiries must decide whether an expression of certainty by the eyewitness was communicated to the jury and, if so, the nature and extent of the certainty expressed. If the court determines there was no degree of certainty conveyed by the witness when making the identification, the jury could not have been misled by including this factor in the instruction.

In this case, there is no question that certainty evidence was submitted to the jury. Trevino indicated at the time of the photo lineup that he was 100 percent certain Mitchell was the robber, and this evidence was admitted at trial. Therefore, he not only made an expression of certainty, but he characterized it with 100 percent certainty. Compare *State v. Anderson*, 294 Kan. ___ (No. 99,123, this day decided) (slip op. at 12-13), in which we

noted the absence of any expressions of certainty in the eyewitness identifications by two witnesses.

In Mitchell's case, it was possible that the jury could have considered Trevino's expression of 100 percent certainty when determining whether his identification was reliable and accurate. PIK Crim. 3d 52.20 instructed the jury it could consider Trevino's expression of certainty, and we presume the jury follows the instructions given. *State v. Reid*, 286 Kan. 494, 521, 186 P.3d 713 (2008). Therefore, it is appropriate that we consider next whether Trevino's identification was a critical aspect of the prosecution's case and then whether there was any serious question about the identification's reliability.

The first consideration is easy. Trevino's identification was critical to Mitchell's conviction because it was the only evidence connecting Mitchell to the crime. But the normal concerns about eyewitness reliability, as discussed in the caselaw and scientific literature, are not present because Trevino knew Mitchell. He had been acquainted with Mitchell for several months before the crime and Mitchell had stayed at his apartment. And this court has previously held that the cautionary eyewitness identification instruction is not required when the witness was personally familiar with the defendant because there is not a substantial likelihood of misidentification. See *State v. Calvin*, 279 Kan. 193, 205-07, 105 P.3d 710 (2005); *Mann*, 274 Kan. at 678-79; *State v. Saenz*, 271 Kan. 339, 354, 22 P.3d 151 (2001).

In addition, we note that other procedural safeguards mitigated any deficiency in the cautionary instruction. For example, during opening argument, Mitchell's defense counsel challenged the credibility of Trevino's claim that he knew his attacker even though he did not know his name. Counsel questioned whether anyone could know someone for months and invite them over to their apartment but not recall a first name, last name, or even a nickname. Defense counsel also pointed out the inconsistencies

between the description Trevino gave to police with Mitchell's actual height, weight, and skin color, arguing someone who "knew" Mitchell should be able to more accurately describe him. Also during cross-examination, Mitchell's attorney elicited testimony that Trevino had been drinking the night they supposedly met and they "barely talked." He also impeached Trevino with his testimony from a preliminary hearing that he lost his vision during the attack when he was punched in the eye, and counsel emphasized Trevino's cocaine use. Finally, during closing argument, defense counsel continued to challenge the veracity of Trevino's claim that he knew Mitchell by pointing out that Trevino's description did not fit Mitchell's characteristics, Trevino's perception was distorted by drinking and possible drug use, and that there was no other evidence, such as fingerprints, to support Trevino's identification.

The jury was thoroughly exposed to the facts and circumstances both in favor of and against the accuracy of Trevino's identification of Mitchell and Trevino's expression of certainty about that identification. Therefore, we affirm the Court of Appeals' holding because the jury could not reasonably have been misled by the instruction under the facts of this case. *Mitchell*, 2009 WL 311814, at *3.

WILLIAM B. ELLIOTT, District Judge, assigned.[1]

[1] **REPORTER'S NOTE:** Pursuant to the authority vested in the Supreme Court by art. 3, § 6(f) of the Kansas Constitution, Judge Elliott was appointed to hear case No. 99,163 to fill the vacancy on the court created by the retirement of Chief Justice Robert E. Davis.