

Disputed Eyewitness Identification Evidence: Important Legal and Scientific Issues

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Eyewitness testimony, when delivered in a confident manner by a witness, may be more convincing to jurors than any other type of evidence. When a witness declares, "That's the man I saw, right there!" most jurors are persuaded that the identification is accurate. After all, the witness was there: why would he or she be mistaken? This strong belief by jurors in the accuracy of eyewitnesses has been demonstrated time after time by research studies.¹ Yet there is a major problem concerning eyewitness evidence. Knowledgeable legal scholars and social scientists have noted that not only is eyewitness evidence powerful, it is also *more likely to be erroneous than any other type of evidence.*²

Many legal scholars have been aware of this weakness at least since 1932, when Edwin Borchard wrote *Convicting the Innocent*.³ Thereafter, the problematic nature of eyewitness evidence was explicitly acknowledged by the U.S. Supreme Court in a 1967 decision, *United States v. Wade*.⁴ In *Wade*, Justice Brennan noted, "The vagaries of eyewitness identification are well-known; the annals of criminal law are rife with instances of mistaken identification."⁵ Additionally, the justices cited a well-known legal text by Patrick Wall,⁶ who had written that many judges and lawyers agreed with the assertion that "[m]istaken identifications have been responsible for more miscarriages of justice than any other factor – more so perhaps, than all other factors combined."⁷

Our purpose here is not to suggest that, because of its high error rate, eyewitness evidence should be excluded at trial. More often than not, eyewitness testimony is accurate, and it is frequently the only evidence available. Furthermore, we do not simply wish to bemoan the weakness of eyewitness evidence.



Because such cautions have already been given to the legal community, our intention is not to repeat them here. Rather, our intent is to provide an up-to-date synopsis of the results of scientific research on factors that affect the accuracy of eyewitness identifications, and to suggest ways in which knowledge of these research findings may be helpful to judges and jurors. It is our contention that if judicial decision-makers are aware of the general unreliability of eyewitness evidence, and also are made aware of scientifically-based knowledge about the specific factors that affect eyewitness accuracy, then the utilization of this knowledge might significantly reduce the number of wrongful convictions that occur. Furthermore, research results suggest that this can happen *without* greatly increasing the chances that guilty defen-

dants will go free.

I. ESTIMATING THE PREVALENCE OF EYEWITNESS ERRORS

How do we know that eyewitness evidence is so error-prone? One source of information is the analysis of actual cases of wrongful convictions. Recently, Huff, Rattner and Sagarin,⁸ made an exhaustive search for cases in the United States since 1900 in which clear instances of erroneous convictions had occurred. These were not cases in which substantial doubt remained, but ones in which indisputable evidence of the person's innocence came to light after the conviction, by way of new forensic evidence or confessions by others. They identified 205 such cases and categorized them by the type of error that led most directly to the conviction (e.g., perjury, forensic errors, negligence by criminal justice officials, coerced confessions,

Footnotes

1. See, e.g., CUTLER & PENROD, *MISTAKEN IDENTIFICATION: THE EYEWITNESS, PSYCHOLOGY, AND LAW* (1995); LOFTUS, *EYEWITNESS TESTIMONY* (1979); LOFTUS & DOYLE, *EYEWITNESS TESTIMONY: CIVIL AND CRIMINAL* (1987); ROSS, ET AL., *ADULT EYEWITNESS TESTIMONY: CURRENT TRENDS AND DEVELOPMENTS* (1994); SPORER, ET AL., *PSYCHOLOGICAL ISSUES IN EYEWITNESS IDENTIFICATION* (1996).
2. HUFF, ET AL., *CONVICTED BUT INNOCENT: WRONGFUL CONVICTIONS AND PUBLIC POLICY* (1996); Huff, et al., *Guilty until Proved Innocent:*

Wrongful Convictions and Public Policy, 32 *CRIME & DELINQ.* 518 (1986).

3. BORCHARD, *CONVICTING THE INNOCENT: SIXTY-FIVE ACTUAL ERRORS OF CRIMINAL JUSTICE* (1932).
4. 388 U.S. 218 (1967)
5. *Id.* at 228.
6. WALL, *EYEWITNESS IDENTIFICATION IN CRIMINAL CASES* (1964).
7. *Id.* at 26.
8. Huff, et al., *supra* note 2.

etc.). In *more than half* of these cases (fifty-two percent), the primary causal factor leading to conviction was incorrect eyewitness identification.

The National Institute of Justice, under the auspices of the U. S. Department of Justice, recently conducted a study of wrongful convictions that had later been identified via DNA evidence.⁹ They identified twenty-eight such cases in which the convicted person was later exonerated by DNA tests that showed that the convicted individual could not have been the perpetrator. All of these cases involved sexual assault, though many involved other additional offenses. More importantly, all of these cases involved eyewitness identifications, and in the vast majority of them, eighty-six percent, erroneous eyewitness identification was the *primary* evidence that had produced the conviction. The report's authors pointed out that when DNA evidence is not admitted, "we force the courts to rely on inferior evidence, such as eyewitness testimony." In all twenty-eight cases, DNA evidence was not available at trial and the triers of fact had to rely on eyewitness testimony, which turned out to be inaccurate.

What is the magnitude of the problem? There can never be an exact answer, because the prevalence of wrongful convictions can never be known precisely. Still, some social scientists have made an educated guess. In the mid-1980s, Huff, Rattner, and Sagarin¹⁰ conducted a mail survey in Ohio of all presiding judges of common pleas courts, all county prosecutors, all county public defenders, all county sheriffs, and the police chiefs of the seven largest cities in Ohio. The overall response rate was sixty-five percent, and at least sixty percent of those in each category responded. Survey respondents were asked to estimate the percentage of convictions that were "wrongful convictions" of innocent persons. Based upon the pattern of responses, the researchers estimated that the average response was that the overall prevalence of wrongful convictions was about one-half of one percent, or one in every two hundred convictions. Unfortunately, we don't know whether their respondents were thinking only about contested trials, or were including *all* convictions, most of which result from guilty pleas. To be sure, an erroneous eyewitness identification could result in a guilty plea, even if to a lesser charge, just as it could result in a conviction after trial.¹¹ If the wrongful conviction percentage estimate is applied to all convictions, then the numbers would be startling. To illustrate, in the mid-1990s there were 2.8 million arrests per year in the U.S. just for the eight most serious crimes on the FBI index. About seventy percent of those arrested for serious crimes were convicted, producing almost two million convictions per year.¹² If one-half of one percent of those convictions were of innocent people, then nearly 10,000 wrongful convictions occurred each year. If more than half of those wrongful convictions were primarily the result of eyewitness

errors, then more than 5,000 innocent people may have been convicted of felonies each year because of erroneous eyewitness identification! If, on the other hand, the wrongful conviction figures are applied only to contested trials, the numbers would be considerably smaller (*i.e.*, 500 to 1,000 cases per year), since only ten to twenty percent of all felony prosecutions go to trial.¹³ As noted, however, some innocent defendants may accept a plea bargain if they fear that they will be convicted at trial. While we will probably never be able to derive a precise figure for the number of wrongful convictions of innocent defendants that occur, this remains an issue of concern to many, and it is clear that erroneous eyewitness identifications form the backbone of those wrongful convictions that do occur.

II. SCIENTIFIC RESEARCH ON EYEWITNESS IDENTIFICATION ACCURACY

A second source of evidence concerning erroneous eyewitness identification consists of the many scientific studies of eyewitness accuracy that have been undertaken in the past three decades. Researchers have isolated a host of factors that can influence the ultimate identification of a suspect. As several exhaustive reviews are readily available in the scientific literature,¹⁴ our goal here is to describe the most grounded findings, and to highlight the most recent advances in the field. While early research began by examining general factors that affect human perception and memory, recent studies have directly investigated face recognition and eyewitness identifications in more applied respects. In general, studies have focused on the conditions under which a misidentification is likely to occur, including the initial perception of the event or suspect (*the encoding phase*), the period in which the memory trace is stored in *memory (the retention interval)*, and the subsequent recall or identification of the suspect (*the retrieval phase*).

Encoding of the Event/Suspect

During the initial perception of the event or suspect, various factors may influence an eyewitness's ability to accurately encode the stimulus (in this case, the crime event and the criminal's appearance) in memory. Contrary to popular belief, human perception does not work like a camera or video recorder. Rather, what is perceived and stored in memory is often incomplete or distorted as a result of the individual's state of mind or the nature of the event observed. For example, in a violent crime situation, the victim or eyewitness may be paying a great deal of attention to the event, but the high level of arousal that they experience is likely to interfere with their ability to accurately encode details of the event (including the face of the perpetrator).¹⁵ Furthermore, research on the *weapon focus effect* has indicated that when a witness is threatened with a weapon

9. CONNERS, ET AL., CONVICTED BY JURIES, EXONERATED BY SCIENCE: CASE STUDIES IN THE USE OF DNA EVIDENCE TO ESTABLISH INNOCENCE AFTER TRIAL (1996).

10. Huff, *et al.*, *supra* note 2.

11. See Daniel Givelber, *Meaningless Acquittals, Meaningful Convictions: Do We Reliably Acquit the Innocent?*, 49 RUTGERS L. REV. 1317, 1350 (1997) (noting that 1 of 28 wrongful convictions found in National Institute of Justice study was result of guilty plea).

12. U. S. Department of Justice, Bureau of Justice Statistics (1995).

13. WRIGHTSMAN, ET AL., PSYCHOLOGY AND THE LEGAL SYSTEM (4th ed. 1998).

14. Fruzzetti, *et al.*, *Memory and Eyewitness Testimony*. in ASPECTS OF MEMORY, VOL. 1: THE PRACTICAL ASPECTS 18 (1992); Ross, *et al.*, ADULT EYEWITNESS TESTIMONY: CURRENT TRENDS AND DEVELOPMENTS (1994); Sporer, *et al.*, PSYCHOLOGICAL ISSUES IN EYEWITNESS IDENTIFICATION (1996).

15. Deffenbacher, *The Influence of Arousal on Reliability of Testimony*, in EVALUATING WITNESS EVIDENCE 235 (1983).

[W]itnesses are highly susceptible to suggestions regarding their memory for the previously viewed event.

(e.g., a knife or gun), the witness's attention is drawn to focus on the weapon, making it less likely that the appearance of the person wielding the weapon will be accurately encoded.¹⁶ An individual's expectations of the event can also influence the manner in which details about the event are recalled. This effect, known as the *confirmation bias*, illustrates that eyewitnesses tend to report a scenario that is consistent with what they expected to see.¹⁷ Other studies have indicated that, in general, memory is better for faces or events seen for longer durations under optimal observational conditions such as good lighting, close distance, low stress, and no disguise.

The Retention Interval

The retention interval can be defined as the time from which the individual perceives and encodes the information to the time when he or she is asked to retrieve the information from memory (e.g., view a lineup). During this interval, a number of factors can influence a witness's later recall of the event or suspect from memory. The major finding has been that witnesses are *highly* susceptible to suggestions regarding their memory for the previously viewed event. Such "post-event suggestions" may come from overhearing the recall of other witnesses or from questioning by field officers investigating the crime, and may involve aspects of the situation or facial characteristics of the suspect.¹⁸ For example, several studies have demonstrated that if witnesses are given another eyewitness's description of the suspect, they will be biased toward selecting a member of the photo lineup who most closely matches the other witness's description, even to the extreme of selecting a lineup member who has a mustache, when the perpetrator did not have one.¹⁹ This *post-event misinformation effect* has been shown to be quite powerful across a vast number of studies, stimuli, and situations. Overall, it appears that individuals tend to "commit" to the post-event misinformation by accepting it as if it were an accurate account. Researchers are not certain whether this new information changes the original memory or instead creates a new memory that "overlies" the original memory, thus making

the original memory temporarily inaccessible.²⁰ More recent studies have indicated that the latter explanation may be more plausible, finding that certain conditions at recall appear to enhance the accurate retrieval of the original event from memory.²¹ But regardless of which process occurs, the result is the same — the witness's original memory is no longer accessible.

Retrieving the Memory of the Event/Suspect

Research has shown that many factors can affect the accuracy with which the memory of a crime or a criminal is retrieved (e.g., when describing the criminal to police or when viewing a lineup). For example, the manner in which eyewitnesses are requested to provide a description of the suspect can have important implications on their ability to subsequently identify him/her. Studies from our own lab have indicated that when people are strongly urged to provide a full and "complete" description of the suspect, they tend to guess (often inaccurately) about features they are not sure of. These inaccurate guesses interfere with their later ability to recognize the person's face in a lineup, producing a higher level of misidentifications than for those who were not urged to give a "complete" description.²²

At the time of retrieval, factors surrounding identification of the suspect from a lineup are critically important. A host of studies have investigated the phenomenon labeled *unconscious transference*, wherein different memory images may become combined or confused with one another. Also termed the *bystander effect*, this phenomenon occurs when a witness misidentifies an individual from a photo lineup as the actual suspect when, in reality, the witness previously saw the individual either as a bystander at the event or in a completely different context.²³ Additionally, research has shown that selecting an incorrect person from a showup or lineup strongly increases the likelihood that the same individual will be selected in future lineups or in-court identifications, despite the inaccuracy of the original identification.²⁴ Such errors in memory at the time of retrieval appear to parallel the misinformation effect discussed previously, in which witnesses tend to commit to a response and provide the same response in subsequent attempts at retrieval.

Several theoretical explanations for such retrieval-based phenomena have been put forth. Some researchers believe them to be the result of *source confusion*, a common memory error that occurs when a person knows that a face seems familiar, but

16. Steblay, *A Meta-Analytic Review of the Weapon Focus Effect*, *LAW AND HUMAN BEH.*, 16, 413 (1992).

17. Darley & Gross, *A Hypothesis-confirming Bias in Labelling Effects*, 44 *J. PERSONALITY AND SOC. PSYCH.* 20 (1983); PETERSON, WITNESSES: MEMORY OF SOCIAL EVENTS (Unpublished doctoral dissertation, Univ. of California at Los Angeles, 1976).

18. Loftus & Ketcham, *The Malleability of Eyewitness Accounts*, in *EVALUATING WITNESS EVIDENCE* 159 (1983); Shaw, et al., *Co-witness Information Can Have Immediate Effects on Eyewitness Memory Reports*, 21 *LAW & HUMAN BEH.* 503 (1997).

19. Jenkins & Davies, *Contamination of Facial Memory through Exposure to Misleading Composite Pictures*, 70 *J. APPLIED PSYCH.* 164 (1985); Loftus & Green, *Warning: Even Memory for Faces May Be Contagious*, 4 *LAW & HUMAN BEH.* 323 (1980).

20. For a review, see Fruzzetti, et al., *Memory and Eyewitness*

Testimony, in *ASPECTS OF MEMORY*, VOL. 1: THE PRACTICAL ASPECTS 18 (1992).

21. Lindsay & Johnson, *Misleading Suggestibility and Memory for Source*, 17 *MEMORY & COGNITION* 349 (1989).

22. MEISSNER. *SELF-GENERATED MISINFORMATION: THE INFLUENCE OF RETRIEVAL PROCESSES IN VERBAL OVERSHADOWING* (Unpublished master's thesis, Florida State Univ, 1998).

23. See Loftus, *Unconscious Transference*, 2 *LAW & PSYCH. REV.* 93 (1976); Read, et al., *The Unconscious Transference Effect: Are Innocent Bystanders Ever Misidentified?*, 4 *APPLIED COGNITIVE PSYCH.* 3 (1990).

24. Brown, et al., *Memory for Faces and the Circumstances of Encounter*, 62 *J. APPLIED PSYCH.* 311 (1977); Gorenstein & Ellsworth, *Effect of Choosing an Incorrect Photograph on a Later Identification by an Eyewitness*, 65 *J. APPLIED PSYCH.* 616 (1981).

incorrectly recalls the source of that familiarity.²⁵ Source information is the hardest type of memory information to keep straight, and virtually everyone has experienced this phenomenon in everyday life. Usually the result of such source confusion is often harmless embarrassment; however, when the confusion involves the suspect in a criminal case, this error is no longer trivial. Another possibility involves *memory blending*, a theoretical account which states that the two mental images (e.g., the criminal and a similar-looking person seen in a showup or lineup) are mentally combined into a single memory representation. As a result of this “blending,” the original memory of the criminal may no longer be accessible.²⁶

When police investigators prepare to present a photo lineup to the eyewitness, several key factors may influence the likelihood of a misidentification. Elsewhere we have recently reviewed the scientific research on the various psychological factors involved in the construction and administration of photo lineups.²⁷ Here we will provide a brief synopsis of the major findings.

When constructing a photo lineup, it is critical that the suspect is not a *distinctive* member of the photo lineup. Distinctiveness can occur because the suspect has physical characteristics that the other lineup members do not have, or because he or she more closely fits the description of the perpetrator than the other lineup members do. To prevent the possibility that the witness might select the target simply due to his or her distinctiveness from the other foils, it is important that all members of the photo lineup fit both a general description and the visual image of the suspect.

During the administration of the photo lineup, intentional or unintentional verbal and nonverbal cues given by others (i.e., law enforcement personnel, attorneys, other witnesses, or other lineup members) can significantly bias identification accuracy. In addition, many witnesses feel strong pressure to make a positive identification, whether from law enforcement officials, concerned friends or family members, or themselves (e.g., a desire to be a “good witness” and help the police). Such pressures increase the chance of an erroneous identification any time that the criminal is *not* in the lineup.

The fairness of a lineup can be tested empirically. To do so, individuals who had never viewed the suspect, or had only read a description of the suspect, are shown the lineup and asked to guess who the suspect is. If a lineup is a fair one (constructed based upon the standard above), the frequency of correct guesses by these individuals should be no more than what might be expected by chance (e.g., one in six, or seventeen percent, for a six-person lineup). By utilizing this technique under both lab-

oratory and case-specific conditions, researchers have developed several measures of *lineup size* (a measure based upon the premise that a lineup should have enough suitable members to ensure that the probability of a chance identification of an innocent suspect is low), and *lineup bias* (a measure estimating the degree to which the suspect is distinctive in appearance in the lineup) that can be used to evaluate the fairness of a given lineup. We have asserted that the bias measure is most important and proposed a reasonable standard for estimating lineup fairness that involves combining the size and bias estimates to create an *overall lineup fairness index*.²⁸

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Recent research studies have found that a number of other variables, often called “system variables,” are influential during the construction and administration of photo lineups. Factors that recent research has shown to be important include: (1) having the lineup administered by someone who is unaware of which lineup member is the suspect (also known as “double-blind testing”); (2) the use of *unbiased instructions* that explicitly state that the perpetrator “may or may not be present” in the lineup, and that the witness may elect to select no one from the lineup; (3) the use of *sequential lineups*, in which the eyewitness views one photo at a time and makes an identification decision before viewing the next photo, since research indicates that there are fewer “false alarms,” i.e., erroneous identifications with this method than with the typical *simultaneous lineup*, in which the eyewitness views all photos at the same time; and (4) the importance of *videotaping* the entire identification process so that independent evaluations of the procedures can be made later, such as in expert testimony.^{28a}

What happens *after* the eyewitness makes a positive identification can also be important. Recent research has shown that if the eyewitness is told, immediately following the lineup administration, that he or she correctly identified the suspect, two results can occur, one obvious and one more subtle. First, not surprisingly, the eyewitness becomes more confident in the accuracy of the identification. Second, though, the feedback also is likely to change his or her memory for the crime itself. The witness is likely to remember that he or she saw the criminal longer, and under better viewing conditions, than previously reported.²⁹

25. See Lindsay, *Memory Source Monitoring and Eyewitness Testimony*, in ADULT EYEWITNESS TESTIMONY: CURRENT TRENDS AND DEVELOPMENTS 27 (1994).

26. Ross, et al., *Unconscious Transference and Lineup Identification: Toward a Memory Blending Approach*, in ADULT EYEWITNESS TESTIMONY: CURRENT TRENDS AND DEVELOPMENTS 80 (1994).

27. Brigham, Meissner, & Wasserman, *Applied Aspects of the Construction, Administration and Expert Assessment of Photo Lineups*, APPLIED COGNITIVE PSYCH. (in press).

28. *Id.*

28a. These research findings were summarized in the first “Scientific Review Paper” created by a special committee of the American Psychology-Law Society. See Kassir, *Eyewitness Identification Procedures: The Fifth Rule*, 22 LAW & HUMAN BEHAV. 649 (1998); Wells, et al., *Eyewitness Identification Procedures: Recommendations for Lineups and Photospreads*, 22 LAW & HUMAN BEHAV. 603 (1998).

29. Wells & Bradfield, “Good, You Identified the Suspect”: Feedback to Witnesses Distorts Their Reports of the Witnessing Experience, 83 J. APPLIED PSYCH. 360 (1998).

It appears that men and women may differ in the type of information they recall about an event.

Characteristics of the Eyewitness and Suspect

Several characteristics of the eyewitness can influence the accuracy of his or her memory and subsequent identification of the suspect. For example, age is important. Studies have shown that although children tend to recall less information when compared with adults, the

standard proportion of correct information recalled does not typically differ between the two populations.³⁰ Overall, elderly adults also tend to perform more poorly than do younger adults. Of most importance, children and the elderly also appear to be more susceptible to the effects of suggestive questioning or post-event misinformation.³¹ While children may demonstrate this effect due to their unwillingness to challenge an adult's authority, the elderly appear more likely to forget the source of where they previously learned the (mis)information.

Other demographic variables that have been investigated include gender and occupation of the eyewitness. It appears that men and women may differ in the type of information they recall about an event (e.g., female-oriented items such as clothing vs. male-oriented items such as a type of car).³² With regard to occupation, it is a common assumption that law enforcement officials will be better at identifying faces than will citizens. However, research has failed to support this assumption, finding that officers perform no better in identifying the faces of perpetrators than do laypersons. Studies have also shown that officers are able to provide more detailed accounts of the event, and that they are less susceptible to the effects of post-event misinformation when compared to laypersons.³³ Empirical studies attempting to train individuals to remember events and faces have demonstrated a similar pattern of results; namely, individuals' accuracy can be improved for recalling details of an

event, but not for identification of faces.³⁴

With regard to characteristics of the suspect, research has primarily focused on the perceived typicality of the face. The presence of unusual attributes that make a face distinctive from other faces (e.g., Cindy Crawford's mole, Jay Leno's chin, Sylvester Stallone's droopy eyes) also make it easier to remember. But such distinctive characteristics also appear to make it more difficult to construct a fair lineup, due to the difficulty in finding other individuals with similar distinctive features. Alternatively, faces that are more typical in appearance are significantly more difficult to later recall or to identify from a photo lineup, and often result in a higher likelihood of false identification.³⁵ A recent example of this phenomenon involves the extensive FBI search for Andrew Cunanan, the individual believed to have murdered fashion designer Gianni Versace in Miami, Florida. Cunanan had a very typical-looking face that resulted in thousands of false reported sightings across the nation.

Interactions between Characteristics of the Eyewitness and Suspect

Certain characteristics of the eyewitness and the suspect can also interact to influence identification accuracy. The most commonly cited example of such an interaction involves the *own-race bias* in face recognition.³⁶ This robust phenomenon reflects the finding that recognition memory tends to be better for faces of one's own race than for faces of other races. As Chance and Goldstein³⁷ noted, "Few psychological findings are so easy to duplicate." Furthermore, researchers have endorsed the importance of the effect in a variety of surveys,³⁸ and expert witnesses have widely cited its influence in testimony on disputed cross-race identifications.³⁹ Although the mechanisms responsible for the effect have not been isolated, current research is examining various aspects of cross-race experience and its possible influence on the manner in which individuals attempt to remember same- and other-race faces.

A second example of such an interaction between the eye-

30. Marin, et al., *The Potential of Children as Eyewitnesses*, 3 LAW & HUMAN BEH., 295 (1979); Pozzulo & Lindsay, *Identification Accuracy of Children versus Adults: A Meta-analysis*, 22 LAW & HUMAN BEH. 549 (1998).
31. Yarmey, *The Elderly Witness*, in PSYCHOLOGICAL ISSUES IN EYEWITNESS IDENTIFICATION, 259 (1996); Goodman & Reed, *Age Differences in Eyewitness Testimony*, 10 LAW & HUMAN BEH. 317 (1986); for a review, see Schooler & Loftus, *Multiple Mechanisms Mediate Individual Differences in Eyewitness Accuracy and Suggestibility*, in MECHANISMS OF EVERYDAY COGNITION, 177 (1993).
32. For a review, see Loftus, et al., *Who Remembers What? Gender Differences in Memory*, 26 MICH. QTRLY. REV. 64 (1987).
33. Yuille, *Research and Teaching with Police: A Canadian Example*, 33 INT. REV. APPLIED PSYCH. 5 (1984).
34. Lavrakas, et al., *A Perspective on the Recognition of Other Race Faces*, 20 PERCEPTION & PSYCHOPHYSICS 475 (1976); Malpass, *Training in Face Recognition*, in PERCEIVING AND REMEMBERING FACES (Davies, et al., eds., 1981); Malpass, et al., *Verbal and Visual Training in Face Recognition*, 14 PERCEPTION & PSYCHOPHYSICS 330 (1973); Woodhead, et al., *On Training People to Recognize Faces*,

22 ERGONOMICS 333 (1979).

35. Hosie & Milne, *The Effect of Experimental Design on Memory for Typical and Distinctive Faces*, 4 MEMORY 175 (1996).
36. Bothwell, et al., *Cross-racial Identifications*, 15 PERSONALITY & SOC. PSYCH. BULL. 19 (1989); Brigham & Barkowitz, *Do "They All Look Alike?" The Effect of Race, Sex, Experience and Attitudes on the Ability to Recognize Faces*, 8 J. APPLIED SOC. PSYCH 306 (1978).
37. Chance & Goldstein, *The Other-race Effect and Eyewitness Identification*, in PSYCHOLOGICAL ISSUES IN EYEWITNESS IDENTIFICATION 153 (1996).
38. Kassin, et al., *The "General Acceptance" of Psychological Research on Eyewitness Testimony: A Survey of the Experts*, 44 AMER. PSYCH. 1089 (1989); Yarmey & Jones, *Is the Psychology of Eyewitness Identification a Matter of Common Sense?*, in EVALUATING WITNESS EVIDENCE: RECENT PSYCHOLOGICAL RESEARCH AND NEW PERSPECTIVES (1983).
39. Brigham, *Disputed Eyewitness Identifications: Can Experts Help?*, 8 THE CHAMPION 10 (1989); Leippe, *The Case for Expert Testimony about Eyewitness Memory*, 1 PSYCH., PUBLIC POLICY, & LAW 909 (1995).

witness and the suspect involves what has been termed the *own-sex bias* in face recognition for women.⁴⁰ Several studies have demonstrated that female participants tend to outperform male participants in remembering female faces. Curiously, though, male and female participants do not consistently differ in their ability to remember male faces.⁴¹

Some Research-Based Conclusions on Eyewitness Memory

Overall, the extensive research on eyewitness memory in recent decades has demonstrated the great range of instances in which an erroneous identification of the suspect might occur. Face recognition is an inherently difficult task under the most optimal conditions. When factors at the crime scene distract the attention and cognitive capacities of the eyewitness, or when questioning or lineup procedures used by law enforcement officials are overly suggestive, the difficulty of this task increases immensely. Most researchers and memory experts would agree that the “weight” assigned to eyewitness evidence should be viewed with great caution. Given the known problems with its accuracy, the most appropriate use of a positive eyewitness identification is not as definitive evidence of guilt, but rather as an indication to law enforcement officials of a potentially valuable direction in which to search for more reliable forms of forensic evidence.

III. U. S. SUPREME COURT RULINGS ON EYEWITNESS EVIDENCE

The first U. S. Supreme Court decisions that specifically addressed eyewitness evidence issues were a trio of 1967 cases: *United States v. Wade*,⁴² *Gilbert v. California*,⁴³ and *Stovall v. Denno*.⁴⁴ The gist of these legal rulings was to determine rights to counsel during identification proceedings, standards regarding suggestibility within identification procedures, and laws regarding in-court identifications if the original identification procedure was determined to be highly suggestive. The *Wade* decision granted a suspect the right to an attorney during a live lineup. However, five years later the Supreme Court reversed the *Wade* ruling in *Kirby v. Illinois*,⁴⁵ limiting the right to counsel only after the initiation of criminal proceedings. Finally, in *United States v. Ash*,⁴⁶ the Supreme Court ruled that there is no right to counsel at any photographic identification procedures. It was believed that since a photo lineup could be reconstructed and subsequently analyzed for suggestivity, counsel was not necessary at the time of the identification.

The U. S. Supreme Court addressed the admissibility of eyewitness identification obtained under suggestive circumstances

in *Neil v. Biggers*⁴⁷ and *Manson v. Brathwaite*.⁴⁸ In evaluating the admissibility of the identification, the Court considered whether, under the totality of circumstances, the identification was *reliable*, even though the confrontation procedure may have been suggestive. The Court established in *Neil*⁴⁹ – and reaffirmed in *Manson*⁵⁰ – five factors that should be taken into account in evaluating the reliability of an identification: (1) the witness’s opportunity to view the criminal during the crime; (2) the length of time between the crime and the subsequent identification (retention interval); (3) the level of certainty demonstrated by the witness at the identification; (4) the (apparent) accuracy of the witness’s prior description of the criminal; and (5) the witness’s degree of attention during the crime.

In the *Neil* and *Manson* cases, the Court’s emphasis appeared to shift from a concern with suggestivity, as demonstrated in the *Wade*, *Gilbert*, and *Stovall* decisions, to an overriding concern with the reliability of an identification, even if it was obtained under suggestive circumstances. At the time of the *Neil* decision, little published scientific research on eyewitness memory existed. The Supreme Court could, therefore, make only “educated guesses” about the factors that might affect eyewitness accuracy. However, scientific research conducted in the ensuing years permits a systematic evaluation of the validity of the five criteria enumerated by the Court. We will briefly examine the validity of each of the five factors that the Court believed were related to eyewitness accuracy, as established by subsequent empirical research.

Research findings indicate that only two of the five *Neil* factors are clearly related to accuracy in the way that the Court assumed. First, as the Court suggested and as we noted earlier, witnesses with a better opportunity to observe the criminal (e.g., better lighting, closer view, longer viewing time) are more likely to make accurate identifications.⁵¹ (But recall also that being told that one’s identification was “correct” can significantly bias one’s memory for how good the opportunity to observe was.) Second, the length of the retention interval (i.e., the time between the crime and the identification) is generally related to accuracy, with longer retention intervals yielding poorer accuracy. But research shows that this relationship is not always simple. Other factors such as race or stress may

Face recognition is an inherently difficult task under the most optimal conditions.

40. Jalbert & Getting, *Racial and Gender Issues in Facial Recognition*, in *PSYCHOLOGY AND LAW: INTERNATIONAL PERSPECTIVES* 309 (1992); Mason, *Age and Gender as Factors in Facial Recognition and Identification*, 12 *EXP. AGING RESEARCH* 151 (1986); Slone, Brigham, & Meissner, *Social and Cognitive Factors Affecting the Own-race Bias in Whites*, *BASIC & APPLIED SOC. PSYCH.* (in press).

41. Lipton, *On the Psychology of Eyewitness Testimony*, 66 *J. APPLIED PSYCH.* 79 (1977); see also Shapiro & Penrod, *Meta-analysis of Facial Identification Studies*, 100 *PSYCH. BULL.* 139 (1986).

42. 388 U.S. 218 (1967).

43. 388 U.S. 263 (1967).

44. 388 U.S. 293 (1967).

45. 406 U.S. 682 (1972).

46. 413 U.S. 300 (1973).

47. 409 U.S. 188 (1972).

48. 432 U.S. 98 (1977).

49. 409 U.S. at 199-200.

50. 432 U.S. at 114.

51. See generally Cutler & Penrod; Loftus; Ross, et al., *supra* note 1.

[O]ne's self-reported confidence in the accuracy of ... identification ... is not a good indicator ...

interact with the length of the retention level and affect eyewitness accuracy.⁵²

The importance of the other three factors for estimating accuracy — witness certainty, description accuracy, and degree of attention — have received mixed support by researchers. With respect to witness certainty, results of thirty-five staged-event studies

showed that there is only a very weak relationship between witnesses' degree of certainty and identification accuracy.⁵³ However, several recent studies have demonstrated that when witnessing conditions are varied to make later identification easier or more difficult (e.g., by shortening or extending the time of encoding), a rather substantial relationship can be found between identification accuracy and confidence of the eyewitness.⁵⁴ To further complicate things, research has demonstrated that witnesses may become more certain of the identification as time passes. Such "confidence hardening" is likely to occur whenever people have publicly committed themselves to their identification, or when they are told that their identification was correct.⁵⁵ Overall, then, one's self-reported confidence in the accuracy of their identification, especially when it is given a considerable time after the identification was made, is not a good indicator of accuracy.

With respect to the apparent quality of a witness's initial description of the suspect, the Court opined that the accuracy of that description would be related to the probable accuracy of the identification. But contrary to the Court's assumption, research has consistently demonstrated that accuracy of description is *not* generally related to accuracy of identification. Further, the apparent "completeness" of a description, the number of attributes that are recalled, also is not related to identification accuracy.⁵⁶ However, there may be one aspect of descriptions that is related to identification accuracy. A recent series of studies in our lab showed that when one looks only at the number of *incorrect* facial features that are recalled, a significant relationship between this aspect of description accuracy and identification

accuracy actually does exist.⁵⁷ To clarify, when people generate incorrect features while giving a description, this appears to lead to later misidentifications. (Unfortunately, this finding is not particularly helpful to law enforcement investigators, since in an actual case one can never be sure which described features are inaccurate descriptions of the perpetrator.) Additional research will be valuable to further specify the precise relationship between characteristics of an eyewitness's description and the accuracy of his or her later identification of the suspect.

Considering the final *Neil* factor, degree of attention, research has found that eyewitnesses who pay a moderate degree of attention to a situation are likely to be more accurate when compared to those who did not pay attention, or to those who were distracted because they were in a stressful crime situation.⁵⁸ Even if someone is trying to be attentive, high fear or stress (if present) is likely to interfere with memory and impair the accuracy of subsequent identifications. The perceptual situation is made even more difficult if a weapon is involved, because the perceiver is likely to focus his or her attention on the weapon (*weapon focus*) rather than on the face of the person holding the weapon. As a consequence, the person does not acquire a strong representation of the suspect in memory.

In several recent cases, courts have held that it was reversible error not to have allowed expert testimony pertaining to several factors outlined in the *Neil* decision, in addition to other factors found to influence eyewitness memory. Specifically, a few cases addressed the research finding that there is not a scientifically significant correlation between confidence and accuracy.⁵⁹ The courts felt this information was particularly relevant not only because the research directly refuted one of the criteria laid out in the *Neil* decision, but also because many jurors believe the opposite to be true: they believe that a strong sense of confidence portends great accuracy. Other cases have addressed factors such as the lack of a significant correlation between description accuracy and identification accuracy, and the effects of stress or weapons on one's ability to remember details of the perpetrator.⁶⁰

While some cases have utilized the *Neil* criteria as a basis for admitting eyewitness expert testimony, the reverse was true in *Farrel v. State*.⁶¹ There, the court decided to exclude eyewitness expert testimony because the victim had both adequate lighting

52. See generally *id.*

53. Bothwell, et al., *Correlation of Eyewitness Accuracy and Confidence: Optimality Hypothesis Revisited*, 72 J. APPLIED PSYCH. 691 (1987).

54. Lindsay, Read, & Sharma, *Accuracy and Confidence in Person Identification: The Relationship Is Strong When Witnessing Conditions Vary Widely*, 9 PSYCH. SCIENCE 215 (1998); Read, et al., *The Relationship Between Accuracy and Confidence in Eyewitness Identification Studies: Is the Conclusion Changing?*, in EYEWITNESS MEMORY: THEORETICAL AND APPLIED PERSPECTIVES 107 (1997).

55. Hastie, et al., *Eyewitness Testimony: The Dangers of Guessing*, 19 JURIMETRICS J. 1 (1978); Wells, et al., *The Tractability of Eyewitness Confidence and its Implications for Triers of Fact*, 66 J. APPLIED SOC. PSYCH. 688 (1981); Wells & Bradfield, *supra* note 29.

56. See Piggott & Brigham, *Relationship Between Accuracy of Prior Description and Facial Recognition*, 70 J. APPLIED PSYCH. 547

(1985); Piggott, et al., *A Field Study of the Relationship Between Description Accuracy and Identification Accuracy*, 17 J. POLICE SCIENCE & ADMIN. 84 (1990); Wells, *Verbal Descriptions of Faces from Memory: Are They Diagnostic of Identification Accuracy?*, 70 J. APPLIED PSYCH. 619 (1985).

57. Meissner, *supra* note 22.

58. Deffenbacher, *The Influence of Arousal on Reliability of Testimony*, in EVALUATING WITNESS EVIDENCE 235-251 (1983).

59. United States v. Jordan, 924 F. Supp. 443 (W.D. N.Y. 1996); United States v. Stevens, 935 F.2d 1380 (3d Cir. 1991); State v. Chapple, 660 P.2d 1208 (Ariz. 1983); People v. Campbell, 847 P.2d 228 (Colo. App. 1992); People v. McDonald, 690 P.2d 709 (Cal. 1984); Weathered v. State, 963 S.W.2d 115 (Tex. Ct. App. 1998).

60. See United States v. Norwood, 939 F. Supp. 1132 (D.N.J. 1996); People v. Jackson, 210 Cal. Rptr. 680, 164 Cal App. 3d 224 (1985); People v. Lewis, 520 N.Y.S.2d 125 (N.Y. Co. Ct. 1987).

61. 612 N.E.2d 124, (Ind. Ct. App. 1993).

and an extended period of time to view the defendant's appearance. In addition, the eyewitness provided police with a rather detailed description of the defendant immediately following the incident.

IV. CASE LAW PERTAINING TO EXPERT TESTIMONY ABOUT EYEWITNESS EVIDENCE

The Admissibility of Scientific Expert Testimony Generally

Concerned about the conviction of innocent persons on the basis of erroneous eyewitness identifications, the courts have struggled in recent years to balance the rights of defendants threatened by the specter of incorrect eyewitness identification with the need to prosecute cases based upon disputed eyewitness identification evidence. As summarized above, thousands of empirical studies have investigated factors that may affect the reliability of eyewitness identification. One could argue that the wealth of general scientific information that these studies have yielded might be very helpful to decision-makers whose cases involve eyewitness identification. However, this information has not been readily accepted by the court system. The introduction of any new type of expert evidence is typically met with skepticism and challenge, and not necessarily for imprudent reasons. But does the exclusion of expert testimony pertaining to eyewitness identification, a topic in which common beliefs are not always accurate, add to the problem of innocent persons being convicted? Below we will address several of the issues that have faced the courts, and describe how they have been handled through the years.

There is a long history pertaining to the admissibility of expert scientific testimony. The leading case on the admissibility of "novel" scientific evidence is *Frye v. United States*.⁶² The *Frye* test is premised on the "general acceptability" rule, in which the scientific evidence to be presented to the jury must be considered good science, *i.e.*, generally accepted within the relevant scientific community. The purpose of the *Frye* test was to screen out unreliable scientific evidence.

In the recent landmark case of *Daubert v. Merrell Dow Pharmaceuticals, Inc.*⁶³ the U.S. Supreme Court found that "general acceptance," as stated under the *Frye* test, was *not* a necessary precondition to the admissibility of scientific evidence under Rule 702 of the Federal Rules of Evidence. The Court opined that the Rule 702 assigned to the trial judge the tasks of ensuring that the expert's testimony was both reliable and relevant to the case at hand, and that the expert is proposing to testify to scientific knowledge that would assist the trier of fact to understand or determine a fact in issue. This "helpfulness" standard of the *Daubert* ruling has been seen as less stringent than the *Frye* test for determining the admissibility of expert testimony.⁶⁴

In explicitly rejecting the *Frye* test, Justice Blackmun wrote for the unanimous majority in *Daubert* that "a rigid 'general acceptance' requirement would be at odds with the 'liberal' thrust of the Federal Rules and their general approach of relax-

ing the traditional barriers to 'opinion testimony.'" The Court stressed that the "overarching subject is the scientific validity" of the research in question, rather than its general acceptance within the relevant scientific community.⁶⁵ Thus, trial judges were assigned the role of gatekeeper, whose task is to decide, in effect, whether the proposed testimony represents methodologically sound research or is "junk science." In *Kumho Tire v. Carmichael*,⁶⁶ the Supreme Court recently reaffirmed this aspect of the *Daubert* decision, ruling that trial judges should be granted broad latitude in determining which factors are applied in assessing the reliability of a given expert's testimony. The Court also extended Rule 702 to include all expert testimony, be it "scientific," "technical," or "other specialized" knowledge.

We should note that the scientific research on factors that affect eyewitness accuracy, which we have very briefly reviewed above, most certainly would meet any reasonable criterion of "good science." The research is published in highly selective, peer-reviewed scientific journals, most of which reject (usually on methodological grounds) about eighty percent of the manuscripts that are submitted to them.

The Admissibility of Expert Testimony on Eyewitness Evidence

While *Frye* and *Daubert* deal with expert testimony in general, our focus is on expert testimony pertaining specifically to the reliability of eyewitness identification. There have been both federal and state court decisions dealing with the admissibility of expert testimony on this subject. In many circumstances, due to contradictory rulings, the overall determination of whether expert testimony on this subject is admissible has not been definitively answered.

Two decades before the *Daubert* ruling, the issue of helpfulness had been raised in *United States v. Amaral*.⁶⁷ The main inquiry in this case pertaining to the admissibility of eyewitness expert testimony was whether the jury would receive "appreciable help" from the proffered expert testimony. Four guidelines were set out in *Amaral* to determine the helpfulness of expert testimony: (1) whether the expert is deemed qualified; (2) whether the testimony proffered is a proper subject for expert testimony, meaning that it will provide information that is not already part of jurors' common knowledge and will not invade the province of the jury; (3) whether the testimony given conforms to a generally accepted explanatory theory; and (4) whether the probative value of the testimony outweighs its possible prejudicial effect. Most decisions based on the *Amaral* ruling have come down against the admittance of expert testimony on the reliability of eyewitnesses.⁶⁸

Three general types of appellate decisions have predominated

[T]his information has not been readily accepted by the court system.

62. 293 F. 1013 (D.C. Cir. 1923).

63. 509 U.S. 579 (1993).

64. See Cutler & Penrod, *supra* note 1.

65. 509 U.S. at 594-95.

66. 119 S. Ct. 1167 (1999).

67. 488 F. 2d 1148 (9th Cir. 1973).

68. See *United States v. Brown*, 501 F. 2d 146 (9th Cir. 1974); *United States v. Brown*, 540 F. 2d 1048 (10th Cir. 1976).

[T]he most common appellate view ... is for the trial judge to use... discretion in admitting or excluding such expert testimony.

the case law pertaining to expert testimony on eyewitness evidence. First, some courts, especially in decisions before the 1980s, ruled that expert testimony about eyewitness memory was *per se* inadmissible. A reason sometimes given for this decision was that there was not a sufficiently large body of research on which to base scientific

expert testimony (a violation of the third *Amaral* criterion). This would have been a legitimate concern up until the late 1970s, by which time a substantial amount of good eyewitness research had been published. Judicial opinions also sometimes said that expert testimony on this issue would invade the province of the jury to evaluate evidence (the second point in *Amaral*), or that information regarding factors affecting eyewitness identification was part of jurors' common knowledge, thereby constituting an improper subject matter for an expert (also part of the second point in *Amaral*).

A second approach, the most common appellate view in recent years, is for the trial judge to use his or her discretion in admitting or excluding such expert testimony. In coming to these decisions, some appellate courts have expressed pessimism that the expert testimony will be of assistance, while other decisions have noted that under some conditions such expert testimony may be relevant and helpful. For example, in *United States v. Jackson*,⁶⁹ it was decided that the court could have, as a matter within its discretion, admitted expert testimony on eyewitness reliability if such testimony had been offered. Similarly, in *McMullen v. State*,⁷⁰ the court held that when the sole issue in a criminal case is one of identity and the sole incriminating evidence is eyewitness testimony, the admission of expert testimony upon factors that affect the reliability of eyewitness identification is within the discretion of the trial judge. To us, this situation represents one in which expert testimony is the most important and would make the greatest contribution.

Finally, a third set of decisions has ruled that the exclusion of expert testimony about eyewitness evidence constitutes a reversible error by the trial court.⁷¹ Again, courts have ruled this way mostly when the sole evidence against a defendant has been the eyewitness identification. Below, we review decisions

that have established criteria for the admission or exclusion of expert testimony about factors that affect the accuracy of eyewitness memory.

Case Law and Research on Jurors' "Common Knowledge"

The belief that factors affecting the reliability of eyewitness identification are common knowledge to the lay juror has often been cited as a reason for the exclusion of expert testimony on this matter. For example, in *People v. Kelly*,⁷² the court felt that the reliability of eyewitness identification was not beyond the ken of the average juror. It is often believed, therefore, that admittance of opinion and expert testimony on information already known to the jury is a usurpation of the jury's fact-finding province. Several court rulings, both federal and state, have opined that the introduction of expert testimony on eyewitness reliability would, in fact, invade the province of the jury.⁷³ However, there have also been cases in which courts have ruled otherwise, suggesting either that the admission of the expert testimony did not invade the province of the jury,⁷⁴ or that, although the expert testimony may invade the province of the jury, the Federal Rules of Evidence do not preclude its admission into testimony.⁷⁵ The basis for this last caveat is that the jury has the wherewithal to accept or reject the expert opinion and afford it the weight it deems appropriate. As noted previously, admittance of expert testimony on eyewitness reliability has been considered especially important when the case against the defendant rests solely on eyewitness identification, and no other physical evidence exists.⁷⁶ However, when other physical evidence is available (e.g., fingerprints, DNA), the exclusion of expert testimony on eyewitness reliability has often been considered harmless error.⁷⁷

Since many legal decisions have been based on the notion that ideas and testimony proffered by an expert witness are already common knowledge to jurors, it seemed an important task for researchers to determine exactly what the lay person knows about factors affecting eyewitnesses. There have been three basic methodologies used to investigate this information: (1) surveying jury eligible citizens as to their knowledge and beliefs; (2) assessing jurors' ability to predict the outcome in an eyewitness identification experiment; and (3) using mock trials to assess the influence of trial techniques such as cross-examination.⁷⁸

Survey studies, conducted by administering questionnaires such as the Knowledge of Eyewitness Behavior Questionnaire

69. 50 F.3d 1335 (5th Cir. 1995).

70. 660 So. 2d 341 (Fla. 1998).

71. See *State v. Chapple*, 660 P.2d 1208 (Ariz., 1983); *People v. McDonald*, 690 P.2d 709 (Cal., 1984); *State v. Moon*, 726 P.2d 1263 (Wash. App. 1986); *United States v. Stevens* 935 F.2d 1380, 1400-01 (3d Cir. 1991).

72. 631 N.Y.S. 2d 926 (N.Y. App. Div. 1995). See also *United States v. Purham*, 725 F.2d 450 (8th Cir. 1984); *United States v. Larkin*, 978 F.2d 964 (7th Cir. 1992); *Johnson v. State*, 393 So. 2d 1069 (Fla. 1980).

73. See *Amaral*, 488 F.2d 1148; *United States v. Daniels*, 64 F.3d 311 (7th Cir. 1995); *State v. Kemp*, 507 A.2d 1387 (Conn. 1986); *People v. Anderson*, 630 N.Y.S. 2d 77 (N.Y. App. Div. 1995).

74. *State v. Chapple*, 660 P.2d 1208 (Ariz. 1983); *People v. McDonald*, 690 P.2d 709 (Cal. 1984).

75. *United States v. Watson*, 587 F.2d 365, (7th Cir. 1978); *United States v. Downing*, 753 F.2d 1224 (3rd Cir. 1985).

76. See *United States v. Downing*, 753 F.2d 1224 (3rd Cir. 1985); *United States v. Jordan*, 924 F. Supp. 443 (W.D. N.Y. 1996); *State v. Moon*, 726 P.2d 1263 (Wash. App. 1986); *Skamarocius v. State*, 731 P.2d 63 (Alaska App. 1987).

77. See *United States v. Moore*, 786 F.2d 1308 (5th Cir. 1986); *State v. Buell*, 489 N.E. 2d 795 (Ohio 1986).

78. Devenport, et al., *Eyewitness Identification Evidence: Evaluating Commonsense Evaluations*, 3 PSYCH., PUB. POLICY, & LAW 338 (1997).

(KEBQ), assess beliefs about factors that affect the accuracy and reliability of eyewitness identification.⁷⁹ The KEBQ consists of fourteen multiple-choice scenarios describing crime scenes, differing in aspects such as retention interval, training, age of the witness, prior photo array identification, and cross-racial identification. Results of such studies have demonstrated that while respondents are sensitive to the influences of cross-race and prior photo array identifications, they appear less sensitive to the effects of age (young or old) and retention intervals on eyewitness reliability. Furthermore, participants tended to believe, contrary to research findings, that training could improve identification accuracy.

A second type of study commonly used is the “post-diction” study, in which participants read written summaries of identification experiments and then guess the accuracy rates that occurred in the experiments. Results indicate that participants usually predict higher accuracy rates for the original subjects than were actually obtained, suggesting that people often believe witnesses to be much more accurate in their judgments than they truly are. For example, Brigham and Bothwell found that more than eighty percent of the registered voters they studied overestimated the accuracy rate of eyewitness research subjects.⁸⁰ Overall, participants in post-diction studies seem to be insensitive to the influence of crime seriousness, instruction bias, and cross-racial identification. Additionally, contrary to research findings, participants seem to believe that confidence is an important variable.

Finally, researchers have used the “mock trial” as a method for assessing jurors’ commonsense knowledge about factors affecting eyewitness reliability. These studies involve manipulating different factors known to influence eyewitness identification accuracy (e.g., observation conditions) and those shown to have little influence on identification accuracy (e.g., witness confidence). Participants are typically asked to assume the role of a juror as they are introduced to the summary of a trial via written transcript, or audio or videotape. Finally, the participants are asked to complete questionnaires assessing their verdicts. For example, Wells, Lindsay, and Ferguson⁸¹ found that witness confidence correlated significantly with whether a juror believed an eyewitness, even though, as noted earlier, research has demonstrated a very weak relationship between witness confidence and eyewitness accuracy.

Researchers have also studied the effects of individuals’ awareness of the conditions surrounding a crime scene at the time of the identification, such as lighting, time of day, and duration of viewing time. For example, in one study

researchers created a transcript stating that the crime occurred at either 9 a.m. on a sunny day, or at 1 a.m., sixty feet from the closest street light. Further, the length of time the witness saw the event was varied between five seconds and thirty minutes. Results demonstrated that jurors displayed a lack of sensitivity to witnessing conditions that may affect identification accuracy, as the conviction rates for groups of subjects who heard about the different conditions did not differ statistically.⁸²

Cutler, Penrod, and Stuve⁸³ investigated the commonsense knowledge of jurors by manipulating ten factors known to influence eyewitness accuracy to varying degrees. Variables studied included the presence or absence of a weapon, whether the perpetrator was wearing a disguise, and whether the crime was violent. Furthermore, the length of the retention interval, the presence or absence of instruction bias and foil bias during identification, and the level of the witness’s confidence were all manipulated. Unfortunately, results demonstrated that jurors seemed insensitive to the factors that should have called the validity of the identification into question. Additionally, participants relied heavily on the expressions of confidence from the eyewitness. A follow-up study demonstrated that college students and jury-eligible citizens were equally insensitive to these important factors.⁸⁴ Researchers have also examined whether jurors can identify factors that would render a lineup biased. Findings suggest that while jurors do have the commonsense knowledge in identifying foil and instruction bias, they have difficulty in applying this knowledge as demonstrated by their verdicts.⁸⁵ Several courts have decided that these sorts of research finding are not necessarily within the jurors’ common knowledge, and that the jury might be missing out on information that might assist them in determining the facts at issue, especially when the eyewitness identification was the sole evidence against the defendant.⁸⁶

[P]eople often believe witnesses to be much more accurate ... than they truly are.

Probative v. Prejudicial Value of the Expert Testimony

As of 1990, psychologists had testified as expert witnesses on the reliability of eyewitness evidence in more than 450 cases

79. Deffenbacher & Loftus, *Do Jurors Share a Common Understanding Concerning Eyewitness Behavior?*, 6 LAW & HUMAN BEH. 15 (1982).
80. Brigham & Bothwell, *The Ability of Prospective Jurors to Estimate the Accuracy of Eyewitness Identifications*, 7 LAW & HUMAN BEH. 19 (1983).
81. Wells, et al., *Accuracy, Confidence, and Juror Perceptions in Eyewitness Identification*, 64 J. APPLIED PSYCH. 440, (1979). See also Lindsay, et al., *Can People Detect Eyewitness Identification Accuracy Within and Across Situations?*, 66 J. APPLIED PSYCH. 79 (1981).
82. Lindsay, et al., *Mock-juror Evaluations of Eyewitness Testimony: A Test of Metamemory Hypotheses*, 16 J. APPLIED SOC. PSYCH. 447

(1986).
83. Cutler, et al., *Jury Decision Making in Eyewitness Identification Cases*, 12 LAW & HUMAN BEH. 41 (1988).
84. Cutler, et al., *Juror Sensitivity to Eyewitness Identification Evidence*, 14 LAW & HUMAN BEH. 185 (1990).
85. DEVENPORT, ET AL., DOES EXPERT PSYCHOLOGICAL TESTIMONY IMPROVE JUROR SENSITIVITY TO LINEUP SUGGESTIVENESS? (unpublished manuscript 1996).
86. See *United States v. Norwood*, 939 F. Supp. 1132 (D.N.J. 1996); *People v. Jackson*, 210 Cal. Rptr. 680 (Cal. App. 1985), *People v. Lewis*, 520 N.Y.S. 2d 125 (N.Y. Co. Ct. 1987).

[T]he expert serves an educational function for the jury.

in 25 states.⁸⁷ Unlike clinical expert testimony on factors such as insanity, competency to stand trial, or child custody, eyewitness experts typically do *not* seek to interview or analyze the individual eyewitness. Rather, the expert serves an educational function for the jury, presenting

the general factors that increase or decrease the likelihood that the average eyewitness will be correct in particular situations. One could suggest that this is like being “a tutor for the jury,” that the eyewitness expert resembles in some ways a judge giving jury instructions. Some courts have ruled that such a role is unnecessary or inappropriate, stating that jurors’ everyday “commonsense knowledge” is sufficient and hence they do not need such “tutoring.” However, it can be argued that such help is both necessary and appropriate, due to the unique status of eyewitness evidence. Research has shown that issues surrounding eyewitness memory are significantly more difficult and counterintuitive than many other issues confronted by jurors.

The function of an expert witness is not to tell the jury what to believe or to imply that a particular witness is either correct or incorrect. The expert does not know whether a particular eyewitness is correct; often, even the eyewitness cannot know this with certainty. What the expert can do is provide the jury members with a *factually based frame of reference* within which to interpret the eyewitness evidence, along with all the other evidence, in reaching a verdict. Awareness of the error factors most relevant to the eyewitness identification in a particular case may cause jury members to weigh the eyewitness evidence more heavily or, conversely, to give it less emphasis than they otherwise would.

This brings us to the fourth component in the *Amaral* decision: the comparison of the probative versus prejudicial value of expert testimony. According to the *Amaral* decision, the probative value of the testimony must outweigh any prejudicial effects. Many courts have felt that the “impressive credentials” an expert brings to the courtroom are enough to create an overwhelming prejudicial effect, thus compromising any ability a juror may have to appropriately weigh the testimony given.⁸⁸ Such thinking cripples the justice system, in that it seems to assume the jurors are unable to make decisions based on weighing evidence when it comes from an expert, as opposed to when it comes from any other witness. Interestingly, it is often believed that police officers carry a

larger amount of persuasive power with juries simply because of their authoritative position, yet their testimony is not usually considered prejudicial.

Some critics have asserted that expert evidence regarding eyewitness reliability may adversely affect jury deliberations by making proper convictions that much harder to obtain. However, research with mock juries has demonstrated this to be untrue, indicating that while jurors do become more skeptical after hearing expert testimony pertaining to eyewitness reliability, it does not result in blanket skepticism. In fact, expert testimony appears to make mock jurors more skeptical in situations where it is appropriate: situations in which the conditions faced by the eyewitness are greatly associated with high error rates. Conversely, in strong cases, where other physical evidence is also introduced, mock juries are just as likely to convict after hearing the expert testimony than after not hearing it. Furthermore, the introduction of expert testimony seems to increase the care with which jurors analyze *all* the evidence, and not just the eyewitness evidence, perhaps encouraging a more deliberate examination of the facts in the case.⁸⁹

V. TRADITIONAL TRIAL SAFEGUARDS FOR DEFENDANTS

Cross-examination

In justifying the refusal to allow expert testimony on the reliability of eyewitness identification, courts often cite the ability or opportunity of defense counsel to use cross-examination as an effective tool in casting doubt upon an eyewitness’s identification of the defendant. Traditionally, skillful cross-examination of opposing witnesses has been seen as the strongest safeguard against mistaken convictions and has been referenced in case law in answer to constitutionality arguments against the ruled inadmissibility of proffered expert testimony. For example, in *United States v. Christophe*,⁹⁰ skillful cross-examination of eyewitnesses, along with jurors’ common sense and experience, were deemed sufficient to alert jurors to specific conditions that would render particular eyewitness identifications reliable. An earlier case, *Jones v. State*,⁹¹ concluded that the defendant’s rights of due process were not violated by excluding the proffered testimony because both of the eyewitnesses were subjected to considerable cross-examination concerning their means and opportunity of observing the perpetrator. This reasoning was repeated more recently in *United States v. Smith*,⁹² which concluded that the proffered expert testimony regarding the reliability of eyewitness identification was inadmissible under the helpfulness prong of *Daubert*, because the jury could

87. FULERO, EYEWITNESS EXPERT TESTIMONY: AN OVERVIEW AND ANNOTATED BIBLIOGRAPHY, 1931-1988 (unpublished manuscript 1993).

88. See *United States v. Collins*, 395 F. Supp. 629 (M.D. Pa. 1975); *United States v. Foshier*, 590 F.2d 381 (1st Cir. 1978); *United States v. Watson*, 587 F.2d 365 (7th Cir. 1978); *United States v. Thevis*, 556 F.2d 616 (5th Cir. 1982).

89. Hosch, et al., *Influence of Expert Testimony Regarding Eyewitness*

Accuracy on Jury Decisions, 4 LAW & HUMAN BEH. 287 (1980); Loftus, *Impact of Expert Testimony on the Unreliability of Eyewitness Identification*, 65 J. APPLIED PSYCH. 9 (1980); Maass, et al., *Testifying on Eyewitness Reliability: Expert Advice Is Not Always Persuasive*, 15 J. APPLIED SOC. PSYCH. 207 (1985).

90. 833 F.2d 1296, (9th Cir. 1987).

91. 208 S.E. 2d 850 (Ga. 1974).

92. 122 F.3d 1355 (11th Cir. 1997).

determine the reliability of the eyewitness identification with the assistance of cross-examination.⁹³

Contrary to these opinions, there are two general reasons why cross-examination, no matter how skillfully conducted, cannot be fully effective in illuminating the accuracy of eyewitness evidence. First, in order to effectively cross-examine, the attorney would need to have the opportunity to identify the factors that were likely to affect the identification, be aware of their influence, and be able to inform the judge and jury of these effects. This is highly unlikely, if not impossible, in most instances. Second, lawyerly skill in questioning an eyewitness may be insufficient to distinguish between an eyewitness who is honestly mistaken and one who is accurate. If a witness were lying, it is possible that cross-examination could make the lie apparent. But when a person is telling the truth as he or she knows it, cross-examination will not necessarily determine accuracy. Furthermore, research studies in which eyewitnesses have been cross-examined by experienced lawyers have shown that mock jurors who view the cross-examination cannot distinguish accurate from inaccurate eyewitnesses.⁹⁴

Cautionary Instructions to Jurors

A second traditional safeguard for defendants is the use of cautionary instructions to jurors. Some courts have utilized special judicial instructions about eyewitness identifications for this purpose. Probably the most widely utilized special instructions are those developed in 1972 by the U.S. Court of Appeals for the District of Columbia in *United States v. Telfaire*.⁹⁵ These instructions focus on the previously outlined factors listed in *Neil v. Biggers*.⁹⁶ Although the *Telfaire* instructions have been employed in many cases, a survey of fifty-two judges found that most of them (seventy-eight percent) did not think that they were proper instructions to give to a jury.⁹⁷ There have been several scientific studies of the effect of these instructions on juror decision-making.⁹⁸ Results indicated that the instructions do not adequately enhance jurors' sensitivity to potential problems in eyewitness identification evidence. Because the *Telfaire* instructions were developed from legal precedents, rather than being based on scientific research findings, they do not address several areas that research has shown are important, such as cross-race identifications, stress, unconscious transference, lineup bias, and weapon focus. Additionally, the instructions emphasize witness certainty

(confidence), which is not a strong predictor of accuracy, according to research findings. In general, then, existing cautionary judicial instructions about eyewitness evidence have two major shortcomings: they are seen as improper by many judges, and they are ineffective in informing jurors about the factors that have been shown to affect eyewitness accuracy.

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shortcomings.**

VI. ON ATTEMPTS TO INFUSE EMPIRICAL RESEARCH FINDINGS AT TRIAL: ROADBLOCKS TO THE ADMISSIBILITY OF EXPERT TESTIMONY

While there has been ample case law that demonstrates a certain willingness to allow scientific expert testimony into the courtroom, there are many cases in which the courts have ruled otherwise. Part of the problem exists because of the inherent differences between scientific research and the law. Whereas legal cases are to be taken each as an individual entity, research results are often the compilation and average of effects across many individuals. In essence, the analogy of comparing apples to oranges may hold true when comparing legal issues to research issues. That is not meant to imply, however, that research into the reliability of eyewitness testimony is not helpful or important.

Another problem stems from the contradictory rulings coming from different state courts pertaining to scientific research itself. For example, in *State v. Chapple*,⁹⁹ the court ruled that the "generality" of the psychologist's testimony was a factor favoring admission. In *Jordan v. State*,¹⁰⁰ the court stated that "too narrow a definition of 'fitting' the case goes beyond the requirements of helpfulness under Rule 702. An expert should not have to address every conceivable factor that might affect eyewitness identification." In contrast, however, much expert testimony on eyewitness identification has been excluded in other cases for this same reason, namely the belief that research findings are too general, or that the testimony given would not help the trier of fact by not enhancing the jury's ability to deduce whether a specific eyewitness was able to make an accu-

93. See *Dyas v. United States*, 376 A. 2d 827 (D.C. App. 1977); *United States v. Larkin*, 978 F. 2d 964 (7th Cir. 1992); *United States v. Langford*, 802 F. 2d 1176 (9th Cir. 1986); *People v. Hurley*, 157 Cal. Rptr. 364 (Cal. App. 1979); *Moore v. Tate*, 882 F. 2d 1107 (6th Cir. 1989); *Jackson v. Ylst*, 921 F. 2d 882 (9th Cir. 1990); *Garth v. State*, 536 So. 2d 173 (Ala. App. 1988).

94. Lindsay, et al., *Mock Juror Belief of Accurate and Inaccurate Eyewitnesses: A Replication and Extension*, 13 LAW & HUMAN BEH. 333 (1989); Lindsay, et al., *Can People Detect Eyewitness Identification Accuracy Within and Across Situations?*, 66 J. APPLIED PSYCH. 790 (1981); Wells, et al., *Accuracy, Confidence and Juror Perceptions in Eyewitness Identification*, 64 J. APPLIED PSYCH. 440 (1979).

95. 469 F. 2d 552, 558-9 (D. C. Cir. 1979).

96. 409 U.S. 188 (1972).

97. Greene, *Judge's Instructions on Eyewitness Testimony: Evaluation and Revision*, 18 J. APPLIED PSYCH. 252 (1988).

98. Cutler, et al., *Nonadversarial Methods for Improving Juror Sensitivity to Eyewitness Evidence*, 20 J. APPLIED SOC. PSYCH. 1197 (1990); Greene, *supra* note 97; Katzev & Wishart, *The Impact of Judicial Commentary Concerning Eyewitness Identifications on Jury Decision Making*, 76 J. CRIM. LAW & CRIMINOLOGY 733 (1985).

99. 660 P. 2d 1208 (Ariz. 1983).

100. 928 S.W. 2d 550 (Tex. Crim. App. 1996).

**[E]yewitness
expert testimony
can be
extremely
beneficial ...**

rate identification.¹⁰¹ Several additional areas in which expert testimony has been proposed will be briefly addressed below.

Cross-Racial Identification

Many experts have proffered testimony regarding the

problems associated with cross-racial or cross-cultural identifications. The basic premise of this issue, supported by research, is that it is generally easier to recognize or identify a person of one's own race, than of another race. The California Supreme Court, in *People v. McDonald*,¹⁰² recognized that this finding may be contrary to most jurors' intuitions. Two aspects of the research findings that the court listed specifically as outside the common knowledge of jurors are (1) that white witnesses who are not racially prejudiced are just as likely to be mistaken in making a cross-racial identification as those who are prejudiced, and (2) that white witnesses who have had considerable social contact with blacks may be no better at identifications than those who have not.¹⁰³

Contrary to the ruling in *McDonald*, however, much of the case law demonstrates a belief that the findings pertaining to cross-racial identifications are actually common knowledge. In *United States v. Watson*,¹⁰⁴ the court ruled that proffered testimony on cross-racial identification was inadmissible because it would not be of probative value to the jury. A similar ruling was made in *United States v. Hudson*,¹⁰⁵ where the court believed that "this issue is one which the jury is already aware." And in *People v. Dixon*,¹⁰⁶ the proffered testimony of the psychologist mentioned that "there is some truth to the folk notions that to whites, all blacks look alike." Based on this comment, the court felt that allowing the testimony to be admitted would only serve to verify an already existing belief, and that the proffer would not go beyond the common knowledge of the experience of the average juror.

Unconscious Transference and Lineup Bias

The phenomenon of *unconscious transference* has been studied extensively, as noted earlier.¹⁰⁷ One example of this phenomenon is when an eyewitness remembers seeing a person from a criminal incident, when he or she may actually be remembering the face from a previous photo lineup (perhaps a biased lineup) or some other contact. It also includes the effects of post-event misinformation on memory.

While there is a great deal of research pertaining to problems

and biases arising from poorly constructed lineups, there is little case law demonstrating a willingness to allow expert testimony regarding this matter. The importance of the issue was noted in *Simmons v. United States*,¹⁰⁸ in which the Supreme Court wrote that "a conviction based on an eyewitness identification at trial following a pretrial identification by photograph will be set aside on that ground only if the photograph identification was so impermissibly suggestive as to give rise to a very substantial likelihood to irreparable misidentification." On this basis, the court ruled in *United States v. Smith*¹⁰⁹ that an expert's testimony should have been admitted. In *Smith*, the defendant asserted that the identification from the lineup was actually a transference made from the showing of the photospread four months earlier. However, based on other physical evidence, the refusal to allow the testimony was considered harmless error.¹¹⁰

Yet, despite cases like *Simmons* and *Smith*, few courts are willing to allow testimony specific to biased photo lineups. For example, in *Johnson v. State*,¹¹¹ the defendant was the only blond member in the lineup and the only lineup member with a slightly, but noticeably, different color blue shirt. Still, the court ruled against admitting expert testimony regarding the dangers of biased lineups.

VII. CONCLUSIONS: WHAT SHOULD BE DONE?

Overall, the wealth of research on eyewitness memory has identified a host of conditions that may increase the chances that an erroneous identification of an innocent suspect may occur. As a form of forensic evidence, eyewitness evidence is severely limited in its degree of *diagnosticity*, its precision in distinguishing guilt from innocence. Indeed, its level of precision and accuracy does not nearly approximate that of other scientifically validated forms of physical evidence obtained from the crime scene (e.g., fingerprints, DNA, etc.). Nevertheless, eyewitness testimony is consistently touted by both prosecutors and appellate courts as a valid form of evidence. Furthermore, it is believed that jurors possess much "common knowledge" regarding eyewitness evidence, including an awareness of its limitations and possible inaccuracy. However, scientific research has failed to support either of these assertions. In light of such findings, it seems imperative that eyewitness testimony be viewed with caution in the courtroom, and that steps be taken to protect defendants who are being tried solely or largely on the basis of this fallible class of evidence.

Research has demonstrated that eyewitness expert testimony can be extremely beneficial to the judicial system for several important reasons. First, based on the thousands of empirical studies on memory and on the factors that influence eyewitness perception, researchers have found that there are specific con-

101. See *United States v. Foshier*, 590 F.2d 381 (1st Cir. 1978); *United States v. Downing*, 609 F.Supp. 784 (3rd Cir. 1985); *United States v. Dowling*, 855 F.2d 114 (3rd Cir. 1988); *People v. Plasencia*, 223 Cal Rptr. 786 (Cal. App. 1985); *Pankey v. Commonwealth*, 485 S.W.2d 513 (Ky. 1972).

102. 690 P.2d 709 (Cal. 1984)

103. See *Echavvaria v. State*, 839 P.2d 589 (Nev. 1992); *State v. Whaley*, 406 S.E.2d 369 (S.C. 1991).

104. 587 F.2d 365 (7th Cir. 1978). See also *People v. Plasencia*, 223

Cal. Rptr. 680 (Cal. App. 1985).

105. 884 F.2d 1016 (7th Cir. 1989).

106. 410 N.E.2d 252 (Ill. App. 1980). See also *State v. Lawhorn*, 762 S.W.2d 820 (Mo. 1988).

107. See notes 22, 23 and 24 *supra*.

108. 390 U.S. 377 (1968).

109. 736 F.2d 1103 (6th Cir. 1984).

110. See *State v. Calia*, 514 P.2d 1354 (Or. App. 1973).

111. 438 So.2d 774, (Fla. 1983).

ditions, situations, and personal characteristics that may cause an identification to be inaccurate. Some of these factors include the witnessing conditions, the presence of a weapon, stress, suggestive post-event information, unconscious transference, lineup bias, witness confidence, and cross-racial identifications. While many courts have felt that jurors have sufficient common knowledge to evaluate the influence of these factors without the advent of expert testimony, research has clearly indicated that jurors are often insensitive to the effects of many of these factors and overly sensitive to other factors (e.g., witness confidence). Without proper instruction on how each of these factors may effect a witness's perceptual ability, jurors are left to rely on their often incorrect, intuitive beliefs about how memory works. To be sure, our intuitive beliefs usually serve us well in dealing with the world, providing us with a largely accurate view of how things work. But the area of eyewitness memory has been shown to be different. Here, these usually reliable beliefs are *not* accurate enough to ensure fair treatment under the law.

Second, some courts have worried that the opinion testimony from an impressive expert may carry more weight with the jury than it should, having a prejudicial impact. But, contrary to this supposition, studies have concluded that defendants in cases containing strong evidence against them are not convicted less when the jurors heard expert testimony, when compared with cases in which expert testimony was excluded. In fact, the jurors spent more time reviewing all of the evidence when faced with expert evidence on eyewitness reliability, demonstrating a willingness on the part of jurors to carefully weigh all testimony equally.¹¹² This type of deliberate inspection of all relevant material only strengthens the jury system. Furthermore, fewer appeals pertaining to eyewitness identification would have to be heard.

Even with the advent of sound, reliable research methodology, and an overall general acceptance within the scientific community at large, the wholehearted acceptance of empirical research into the legal field has been slow in coming. The juxtaposition of psychological research and the law is a difficult one, as the two disciplines have vastly different foundations — one having an individualistic focus, and the other being an empirical, aggregated focus. However, this does not preclude the possibility that the two can build a strong working relationship in which each may benefit from the knowledge and wisdom of the other.

As one researcher pointed out, "What one generation of lawyers prefer to understand as 'common sense' often depends upon the theory and findings of the previous generation of [scientific] investigators."¹¹³ The challenge faced by attorneys, legal scholars, and researchers involved with disputed eyewitness identifications is to persuade the courts of the relevance of the research findings and the possible benefits of infusing such research (via expert testimony or some other means) into the judicial system. Courts in recent years have become increasingly cognizant of the benefits (and sometimes the necessity) of utilizing scientific findings, often introduced via expert testi-

mony, for issues to which they are relevant. It seems to us that the issue of eyewitness evidence is one for which such testimony is particularly important and relevant. Indeed, such testimony would only seem to strengthen the criminal justice system by reducing the frequency with which innocent persons, victims of the frailties of human perception and memory, have the misfortune of being falsely accused and erroneously convicted of a crime.



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112. See text *supra* at note 89 and note 89.

113. YARMEY, THE PSYCHOLOGY OF EYEWITNESS TESTIMONY 227 (1979).