

2016

State of Utah v. Manuel Antonio Lujan : Brief of Petitioner

Utah Supreme Court

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Case No. 20150840-SC

IN THE
UTAH SUPREME COURT

STATE OF UTAH,
Plaintiff/Petitioner,

v.

MANUEL ANTONIO LUJAN,
Defendant/Respondent.

Brief of Petitioner

On Writ of Certiorari to the Utah Court of Appeals

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UTAH APPELLATE COURTS

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TABLE OF CONTENTS

TABLE OF AUTHORITIES	iv
STATEMENT OF JURISDICTION	1
INTRODUCTION	1
STATEMENT OF THE ISSUES	3
CONSTITUTIONAL PROVISIONS, STATUTES, AND RULES	3
STATEMENT OF THE CASE	4
A. Summary of facts	4
B. Summary of proceedings	10
SUMMARY OF ARGUMENT	16
ARGUMENT	
I. ONEY'S IDENTIFICATION OF DEFENDANT AS THE ROBBER WAS CONSTITUTIONALLY ADMISSIBLE	19
A. A defendant's due process rights under the Utah Constitution are not implicated absent State conduct.	21
B. <i>Ramirez</i> did not purport to abandon the conditional two-step approach of the federal model.	25
1. The federal due process model is a conditional two-step analysis.	25
2. <i>Ramirez</i> sought only to replace the <i>Biggers</i> factors with the <i>Long</i> factors.	27
C. This Court should clarify its state due process analysis.	29
1. Step One—assessing the suggestiveness of the police identification procedure.	30
2. Step Two—weighing the <i>Long</i> factors against the suggestiveness of the police identification procedure.	30

D. Kenneth Oney's identification of Defendant as the robber was not constitutionally unreliable.....	32
1. The arrest-site identification was at least arguably suggestive.....	33
(a) Procedural factors of arrest-site identification.....	33
(b) Witness factors.....	35
2. Witnessing conditions at the crime scene.	38
(a) Opportunity to view robber during the robbery.....	39
(b) Degree of attention Oney gave to robber.	43
(c) Oney's capacity to observe the robber given the nature of the event.	44
II. IN ANY EVENT, ANY ERROR WAS HARMLESS BEYOND A REASONABLE DOUBT	49
CONCLUSION.....	53
CERTIFICATE OF COMPLIANCE	54
ADDENDA	

Addendum A: *State v. Lujan*, 2015 UT App 199

Addendum B: Utah Const. art. I § 12.

Addendum C: Trial Exhibits
 State's Exhibit 27 (hvac units from walkway)
 State's Exhibit 28 (hvac units without fence)
 State's Exhibit 43 (Manuel Lujan)
 Defendant's Exhibit 1 (lineup)

Addendum D: Eyewitness Literature

Gary L. Wells, Amina Memon, & Stephen D. Penrod,
Eyewitness Evidence: Improving its Probative Value, 7
Psychological Science in the Public Interest 45, 53-54
(2006)

Gary L. Wells & Elizabeth Olson, *Eyewitness Testimony*,
54 Ann. Rev. Psychol. 277, 281 (2003)

TABLE OF AUTHORITIES

FEDERAL CASES

<i>Brisco v. Ercole</i> , 565 F.3d 80 (2nd Cir. 2009).....	34
<i>Chapman v. California</i> , 386 U.S. 18 (1967).....	50
<i>Colorado v. Connelly</i> , 479 U.S. 157 (1986)	21, 23
<i>Manson v. Brathwaite</i> , 432 U.S. 98 (1977)	<i>passim</i>
<i>Neil v. Biggers</i> , 409 U.S. 188 (1972)	25, 26, 30, 31
<i>Perry v. New Hampshire</i> , 132 S.Ct. 716 (2012)	19, 20, 23, 24
<i>Simmons v. United States</i> , 390 U.S. 377 (1968)	26, 31, 32
<i>United States v. Bagley</i> , 473 U.S. 667 (1985).....	23

STATE CASES

<i>Mower v. McCarthy</i> , 122 Utah 1, 245 P.2d 224 (1952).....	12
<i>Rahofy v. Steadman</i> , 2012 UT 70, 289 P.3d 534.....	3, 8
<i>State v. Decorso</i> , 1999 UT 57, 993 P.2d 837.....	21
<i>State v. Guzman</i> , 2006 UT 12, 133 P.3d 363.....	35, 36, 37
<i>State v. Hoffhine</i> , 2001 UT 4, 20 P.3d 265.....	21
<i>State v. Hollen</i> , 2002 UT 35, 44 P.3d 794.....	21
<i>State v. Hubbard</i> , 2002 UT 45, 48 P.3d 953	<i>passim</i>
<i>State v. Long</i> , 721 P.2d 483 (Utah 1986).....	<i>passim</i>
<i>State v. Lujan</i> , 2015 UT App 199	<i>passim</i>
<i>State v. Nelson</i> , 950 P.2d 940 (Utah App. 1997).....	50
<i>State v. Ramirez</i> , 817 P.2d 774 (Utah 1991)	<i>passim</i>

<i>State v. Redd</i> , 2001 UT 113, 37 P.3d 1160	22
<i>State v. Rettenberger</i> , 1999 UT 80, 984 P.2d 1009.....	20, 23
<i>State v. Rivera</i> , 954 P.2d 225 (Utah App. 1998).....	46
<i>State v. Tiedemann</i> , 2007 UT 49, 162 P.3d 1106	22
<i>State v. Villarreal</i> , 889 P.2d 419 (Utah 1995).....	51
<i>State v. Willett</i> , 909 P.2d 218 (Utah 1995)	22
<i>State v. Clopten</i> , 2009 UT 84, 223 P.3d 1103.....	<i>passim</i>

STATE STATUTES

Utah Code Ann. § 78A-3-102 (West 2009).....	1
Utah Const. art. I § 12.....	3, 20, 24

STATE RULES

Utah R. App. P. 24	54
Utah R. App. P. 27	54
Utah R. App. P. 46	50

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Brief of Petitioner

STATEMENT OF JURISDICTION

This case is before the Court on a writ of certiorari to the Utah Court of Appeals in *State v. Lujan*, 2015 UT App 199 (Addendum A). The Supreme Court has jurisdiction under Utah Code Ann. § 78A-3-102(5) (West 2009).

INTRODUCTION

Kendall Oney couldn't sleep and was sitting in the driver's seat of his car at 3:30 in the morning when Defendant opened the door and squatted down, putting his exposed face mere inches away from Oney's face. Defendant looked directly at Oney and said, "Why you following me?" The dome light and the dashboard lights illuminated the pair as they looked at each other. After several seconds, Defendant stood and reached toward what Oney believed to be a weapon tucked in his waistband. Oney slowly

stood, putting the two once again face-to-face for several more seconds in an area lit by two street lights, a porch light, a flood light, and the car's headlights. Oney spoke calmly and watched Defendant while at the same time moving slowly around both Defendant and the car before bolting for his house. Defendant then stole Oney's car. Oney immediately called police with a description of Defendant: a Hispanic male, about 5'10", 180 pounds, with long hair, and wearing a black leather jacket and a black beanie.

Within 20 minutes of Oney's early morning call, officers had: followed a leak from Oney's driveway to the stolen car parked next to a walkway that led to an elementary school; established a containment area and a visible police presence; followed a canine from the car near the school; discovered Defendant curled up inside a component of the school's exterior air conditioning unit; and obtained Oney's positive identification of Defendant. Defendant matched the description Oney gave police, including height, weight, build, coloring, ethnicity, and clothing. He had a "scraggly" salt and pepper goatee that had not been mentioned, and he had no hair sticking out from under his beanie. When asked why he was there at the school, Defendant stated, "[S]omebody is following me." Oney thereafter

identified Defendant as one of two familiar individuals at a lineup, then positively identified him at the preliminary hearing and at trial.

STATEMENT OF THE ISSUES

This Court granted certiorari review on the following issues:

1. "Whether the majority of the panel of the Court of Appeals erred in reversing the district court's denial of Respondent's motion to suppress eyewitness identification testimony."

2. "Whether the majority of the panel of the Court of Appeals erred in holding the State was required to demonstrate that any error in admission of the eyewitness identification was harmless beyond a reasonable doubt, and whether it erred in concluding the admission of that testimony was not harmless."

Standard of Review. On certiorari, this Court reviews decisions of the court of appeals for correctness. *Rahofy v. Steadman*, 2012 UT 70, ¶7, 289 P.3d 534.

CONSTITUTIONAL PROVISIONS, STATUTES, AND RULES

The following constitutional provision is reproduced in Addendum

B: Utah Const. art. I § 12.

STATEMENT OF THE CASE

A. Summary of facts.

Defendant's encounter with the victim – "Why you following me?"

Forty-year-old Kendall Oney was an amateur astronomer, familiar with late-night and early-morning stargazing and used to getting up in the very early morning. R357:15-18. So when he found himself unable to sleep around 3:30 a.m. on November 25, 2012, he got out of bed. R357:15-18, 65. The night was overcast, so he decided to use the time to get his car ready for its annual inspection. R357:16-18, 22, 65.

As he sat in the driver's seat in his driveway checking the starter, gauges, and lights, he came face-to-face with Defendant, who opened the driver's door and squatted next to the seat looking directly at Oney. R357:16-18, 29, 34-35, 74-77. His face was about ten inches from Oney's face, was not obscured by any covering, and was lit by the car's "[f]airly bright" interior lighting, which included both the dome and dashboard lights. R357:17-18, 26, 35, 77. As Oney stared at Defendant's face, Defendant asked, "Why you following me? Why you following me?" R357:18, 35, 77.

Oney initially thought Defendant might want a drink or a ride. R357:18. But after about ten seconds, Defendant stood up, opened his jacket and reached for the handle of something tucked into his waistband.

R357:18, 35-36, 39, 77. The movement left Oney looking directly at Defendant's torso and hands, and upwards at his face. R357:37-38, 78. Oney's surprise turned to fear, and he decided to get back to the house. R357:18-19, 35, 41, 78, 81. He stood up, putting himself face-to-face with an equally-tall Defendant and so close that the men were "almost touching." R357:37-38, 49-50, 101. At the same time, Oney started talking calmly to Defendant, asking what was going on and if he was all right. R357:18-19, 35. For about five seconds, Oney moved slowly around Defendant and the car as he talked, paying special attention to Defendant's face and hands and never losing sight of him. R357:36-38, 40-41, 82. Defendant moved with Oney, ultimately moving into the car's headlights. R357:36, 41, 51.

Oney saw Defendant as he stood up because of illumination from multiple sources:

- the car's headlights (R357:27);
- the porch light by the back door of the house about twenty feet away (R357:29, 67-68; State's Exh. 19);
- a street light at the front of Oney's house about thirty yards away (R357:32-35; State's Exh. 9, 18);
- a street light in the front yard of the house behind Oney's car about thirty-five feet away (R357:33, 69-72; State's Exh. 17);

- a flood light on the house next door to the driveway about forty feet away, which shown on Defendant from behind (R357:30-34; State's Exh. 16); and
- the reflection of the street lights and other lighting off the clouds (R357:18, 26).

The trees were bare, allowing the multiple lighting sources to leave the area "fairly well illuminated." R357:22-23, 26. In fact, the circumstances provided "pretty bright" lighting, allowing Oney to see Defendant and to judge his movements. R357:19, 22, 25-26.

After about five seconds of maneuvering, Oney turned and ran for his house. R357:19, 40-41. He immediately turned on the flood lights on the back of his house, woke up his brother, and stepped back outside in time to watch Defendant squeal away in his car to the end of the driveway before turning north and speeding away. R357:19, 29-30, 42-43, 67-69, 90-91; State's Exh. 13, 14.

Defendant's capture by police – "[S]omebody is following me."

Oney called the police and gave a description of the car thief—a Hispanic male, about 5'10", 180 pounds, with long hair, and wearing a black leather jacket and a black beanie. R357:42-44, 50, 83-87, 91; R359:10-12. Officer Shawn Bias responded from nearby within a minute of getting the dispatch. R357:110, 117. While talking with Oney, Bias noticed a trail of liquid on the ground leading from where the car had been parked to the end

of the driveway, then turning north the way Oney's car had gone. R357:45, 119-20. The officer immediately left to follow the trail, which led directly to Oney's abandoned car a few blocks away. R357:46-48, 119-20, 125-32; R359:13; State's Exh. 1. It was stopped at a curb a few blocks from Oney's house in front of a fenced concrete pathway leading to the schoolyard of an elementary school. R357:120-21; State's Exh. 21, 23, 24.

Because no more than ten minutes had passed since Oney's call to police, Bias believed that the suspect could still be nearby. R357:122-23. The location and the officer's years of experience led him to believe that the suspect may have seen the police, abandoned the car, and hid. R357:124. Consequently, the officer called for a K-9 unit to help locate the suspect and for additional officers to set up a containment barrier to prevent his escape. R357:122-23.

Officer Swazo and his dog arrived shortly after, and the dog wasted no time picking up a scent and leading the officers "very strongly" from Oney's car to the nearby pathway, then down the pathway and across the schoolyard toward the school. R357:125-29, 143-44; R359:17. Officer Swazo handled the dog while Officer Bias followed behind him with his flashlight on and gun drawn. R357:128-29. Officer Bias was mere feet into the schoolyard when he heard a noise coming from the direction the dog was

tracking. R357:129, 145; R359:17. It sounded to him like a person jumping a chain link fence. *Id.*

Several portable classrooms—each an individual building—were clustered next to the school building on the path the dog was tracking. R357:128-30, 147; State's Exh. 27 (showing where classrooms stood before being removed). While Officer Suazo stopped the dog to do a routine safety sweep around the classrooms to ensure no one was hiding there who might ambush them, Officer Bias continued toward the school to follow the noise he had heard, constantly looking around to ensure no one approached them from the school. R357:129, 132-33; R359:17, 26-27. Near the building just beyond the classrooms, he tracked a rustling noise to the heating/air conditioning unit that was against the school wall and surrounded by a 9-foot high chain link fence. R357:129; R359:17; State's Exhs. 27 & 28 (in Addendum C). He did not yell for help because he did not want to broadcast his location before he was ready. R357:130. Instead, believing someone or something was inside the heating unit, he neared the unit, identified himself, and ordered the person to come out. R357:130, 148; R359:17. Getting no response, he moved to within three feet of the unit and found Defendant "curled into a ball" inside the heating unit. R357:129-30, 132-33, 148-49. Bias repeated his command numerous times, as did the

other uniformed officers who joined him, but Defendant simply made eye contact without complying with the orders. R357:130-33, 149; R359:28-29. The only way in or out was a padlocked gate, suggesting Defendant had scaled the fence. R357:130, 134. No other basis was found for the noise Bias heard and no other people were found. Officers used a bolt cutter on the lock, and Defendant eventually came out. R357:130; R359:18. When the officer asked Defendant why he was hiding, Defendant said, "somebody is following me." R359:8. He claimed that he had called 911 to get police to help him.

Bias concluded that Defendant matched the description of the car thief "very well"—he appeared to be Hispanic and was wearing a black beanie and a black jacket. R357:136-37, 141-42; R359:18.¹

The first identification

Within five minutes of Officer Bias's visit, another officer drove Oney to identify the abandoned car, then to the schoolyard where Oney positively identified Defendant as the man who stole his car. R357:45-47, 49-51, 91-93, 135-36. At the "showup"—held within thirty minutes of the crime—Defendant was the only non-officer present, was in handcuffs, and was

¹ A quick search of Defendant revealed no weapons, but a knife was found on him during booking. R359:25-26, 29, 46, 94.

illuminated with police spotlights. R357:49, 93-94; R359:22. However, Oney identified him based on his looks, not the setting. R357:49-50, 94-95, 106-07. Oney testified that Defendant was wearing the black jacket when Oney identified him at the showup. R357:49-50.

B. Summary of proceedings.

The second, third, and fourth identifications

The State charged Defendant with first-degree-felony aggravated robbery. R1-3. At a lineup four months after Defendant's arrest, Oney selected Defendant (#6) and one of the other men (#8). R357:51-54, 60-62, 95-97; State's Exh. 43 & Def's Exh. 1 (in Addendum C). At trial, he explained that he recognized Defendant's eyes, thought his goatee looked familiar, and knew that he was the robber, but that one of the other men "looked familiar," prompting the dual identification. R357:62-64. Oney thereafter positively identified Defendant at both the preliminary hearing and the trial. R357:20.

The trial court's ruling

Before trial, the judge admitted expert testimony from Dr. David Dodd, PhD., concerning the unreliability of eyewitness identification testimony. R89-108, 111-18, 142-44; R221; R356:*passim*. At the same time,

the judge denied Defendant's pre-trial motion to suppress all of Oney's identifications of Defendant. R54-55, 60-88; R356:75-76. The judge ruled:

THE COURT: Based upon what I've heard today, as well as the fact that as I think about five to 7 minutes in this contest – five to 7 –

[DEF CNSL] Seconds.

THE COURT: --seconds, excuse me, in this context, it appears sufficiently enough under a dome light and otherwise darkened area where it's – it's pre-lit to have at least the State in this particular case ... provided sufficiently reliable evidence to suggest that – that identification should not be suppressed and for the other factors that [the prosecutor] has articulated all of which seem to be frankly compelling associated with the identification. [sic] The Court finds that that test associated with sufficiently reliable evidence to support the identification has been met by the State. And the victim in this particular case will be entitled to testify about what it is he identified on that evening.

R356:75-76. The factors articulated by the prosecutor included:

- Oney and the suspect were face-to-face within a foot of each other for 5 to 7 seconds;
- the car's dome light and dashboard lit Defendant's face the entire time;
- Oney kept his eyes on Defendant at all times until Oney reached the front of the car where he turned and bolted for the house;
- Oney's inability to sleep could have resulted from something other than fatigue;
- the car had a fluid leak which led an officer to the abandoned car with its door open;

- a K9 sniffed the car's area and led his handler up the nearby sidewalk path through the schoolyard to the air conditioning unit outside the school;
- an officer heard a fence rattle, followed the noise to the enclosed air conditioning unit, and, using a flashlight, saw an individual inside meeting Oney's general description of the robber, including the ethnicity, general height and weight, black beanie, and black jacket;
- the suspect's first words to Oney were "Are you following me" or "why are you following me," and Defendant's first words to officers when found were "I'm being followed";
- at 4:00 a.m. on a winter morning, Defendant was found within a couple of miles of Oney's home and near the abandoned stolen car;
- Defendant met the suspect's general description;
- it is not reasonably likely that many individuals fitting the suspect's general description would be in the area at that time of day;
- Oney identified Defendant at the school within thirty minutes of the robbery; and
- Dodd explained that even though certain details about an identification could be wrong, it does not necessarily mean that the identification itself is wrong.

R356:70-75.²

² Although the judge did not make express findings of fact regarding the reliability of the identifications, he adopted as "compelling" the prosecutor's articulation of the factors set forth in *State v. Ramirez*, 817 P.2d 774 (Utah 1991). R356:75-76. Accordingly, this Court should assume that the judge found the facts in accord with the prosecutor's argument. See *id.* at 787-88 (where "factual issues are presented to and must be resolved by the trial court but no findings of fact appear in the record, we 'assume that the trier of facts found them in accord with its decision.'" (quoting *Mower v. McCarthy*, 122 Utah 1, 6, 245 P.2d 224, 226 (1952))).

The prosecutor also reminded the court that an expert would guide the jury on weighing each factor. R356:70. Finally, the trial court instructed the jury about factors that may affect an identification's accuracy. R308-11.

The defense

In an effort to undermine the reliability of Oney's eyewitness identification at trial, the defense focused on the differences between Oney's initial description of the robber and Defendant's appearance when he was arrested. Oney initially described the robber as having "long hair" sticking out the bottom of his beanie "maybe an inch," but Defendant had short, almost shaved, hair. R357:85-86; State's Exh. 43. Oney made no mention of facial hair in his initial report and said at the preliminary hearing that he saw no facial hair, but testified at trial that he remembered a goatee and that the goatee was part of the reason he focused on Defendant at the lineup; Defendant sported an untrimmed goatee when arrested. R357:63-64, 87-89, 136-37, 149-50; R359:11-12, 18-19. Officer Bias described it as "long scraggly facial hair." Where Oney consistently maintained that the robber wore a black leather jacket during the robbery and at the arrest site, no jacket was

inventoried when Defendant was booked, and none was produced at trial.³
R357:43, 83-84, 106-07, 118; R359:52-53, 58, 69.

A jury convicted Defendant as charged. R286. Defendant was sentenced and timely appealed to this Court, which transferred the case to the court of appeals. R335-38, 340-41, 348-52.

The court of appeals' ruling

In a split decision, the court of appeals reversed and remanded for a new trial. *See generally State v. Lujan*, 2015 UT App 199. The majority identified the five factors articulated in the 1991 case of *State v. Ramirez*, conducted a simple balancing of some of those factors, and concluded that if “*Ramirez* was an extremely close call, we are confident that here” the testimony was “legally insufficient” to be deemed reliable. *Id.* at ¶¶12-15; *see State v. Ramirez*, 817 P.2d 774, 782-84 (Utah 1991). It based its ruling on (1) the “troublesome” suggestiveness of the showup combined with the racial difference between Defendant and the eyewitness; (2) differences in Oney’s description of the robber the night of the robbery and at trial, especially regarding the length of the robber’s hair and the existence of facial hair; and (3) Oney’s failure to identify only Defendant at the lineup.

³ At least two police officers also remembered Defendant wearing a black jacket when he was arrested early on a winter morning, suggesting that the jacket was later misplaced. R357:141-42; R359:46-47.

Id. at ¶¶14-15. The majority ruled the evidence inadmissible, held that the error was not harmless beyond a reasonable doubt, vacated the conviction, and remanded the case for a new trial. *Id.* at ¶19.

Judge Pearce took the polar opposite position in his dissent, finding it impossible to “squint at *Ramirez*’s holding in a way that permits [one] to see how the identification testimony offered in this case is less reliable than the testimony the *Ramirez* court deemed admissible.” *Id.* at ¶21 (Pearce, J., dissenting). Judge Pearce reviewed each *Ramirez* factor, first under *Ramirez*’s facts and then under the facts at hand; he acknowledged the same “concerns” noted by the majority. *Id.* at ¶¶22-30. But, unlike the majority, he determined that, in “almost all respects, the showup involving Defendant in this case was substantially less troublesome than that the *Ramirez* court approved.” *Id.* at ¶21.

Review of the first three factors led Judge Pearce to find that this case fared better than *Ramirez* on each factor. *Id.* at ¶¶24-26 (Pearce, J., dissenting). Only the fourth factor—whether Oney’s identification was made spontaneously and remained consistent—caused Judge Pearce concern. *Id.* at ¶¶27-29. This factor included consideration of the consistency of Oney’s descriptions of the robber. Oney was not fully consistent in his identification of Defendant at the lineup where he identified both

Defendant and another man as the robber, was inconsistent in his description of Defendant's facial hair, and was wrong in claiming Defendant had long hair. *Id.* at ¶29. It was these inconsistencies, the judge explained, that "present the only way in which this matter could be considered a better candidate for reversal than *Ramirez*." *Id.* Ultimately, however, there were a "myriad" of other ways in which the testimony admitted in *Ramirez* was more unreliable than the testimony excluded in this case, prompting Judge Pearce to believe that the discrepancies were insufficient to require reversal under *Ramirez*. *Id.*

Finally, Judge Pearce acknowledged that the showup in this case was "troublesome," as was the showup in *Ramirez*. *Id.* at ¶31. However, where a similar showup did not render the eyewitness testimony in *Ramirez* inadmissible, Judge Pearce found no basis for a different outcome in this case. *Id.*

SUMMARY OF ARGUMENT

I. Eyewitness identifications. This Court should clarify its state due process model governing the admissibility of eyewitness identifications. At the outset, the right to due process protects against the miscarriage of justice resulting from state action. Absent police conduct causally related to the identification, there is simply no basis for concluding that any state actor

has deprived a criminal defendant of due process of law. This Court should also clarify that *State v. Ramirez* did not intend to eliminate the conditional two-step approach of the federal model applied in *Neil v. Biggers*.

Under step one, trial courts must determine whether the police identification procedure itself was suggestive, and if so, to what extent (embraced in the fourth *Long* factor). If the procedure was not suggestive, the evidence should be submitted to the jury without further inquiry from the trial court. If the police identification procedure was suggestive, trial courts proceed to step two. In that step, trial courts must weigh the remaining *Long* factors against the suggestiveness of the identification procedure to determine whether the identification was clearly unreliable. The identification should be suppressed as constitutionally inadmissible only if there is a very substantial likelihood of irreparable misidentification. Short of that, the identification should be submitted to the jury for its consideration.

The showup by which Kendall Oney first identified Defendant as the robber was suggestive but did not produce the victim's identification of Defendant. Instead, Oney testified that his identification of Defendant was prompted by his recognition of the individual, not by the surroundings.

And the witnessing conditions at the time of the crime were imminently more reliable than in *Ramirez*. As a result, to the extent the identification procedure was suggestive, it cannot be said that the witnessing conditions were so poor that there was a very substantial likelihood of irreparable misidentification.

II. Harmless Error. Should this Court rule that there was "a very substantial likelihood of irreparable misidentification" requiring exclusion of the identification testimony, it must determine whether the error was harmless. The court of appeals' majority reached this issue and, for the first time in this jurisdiction, applied the same standard used for a federal constitutional due process error: harmless beyond a reasonable doubt. The standard should remain undecided in this jurisdiction because, even if the federal standard applies, it was met here. Even without Oney's eyewitness identification of Defendant at the arrest site, the lineup, the preliminary hearing, and the trial, a thorough review of the evidence reveals sufficient compelling evidence of Defendant's guilt to establish that admission of the eyewitness identification testimony was harmless beyond a reasonable doubt.

ARGUMENT

I.

ONEY'S IDENTIFICATION OF DEFENDANT AS THE ROBBER WAS CONSTITUTIONALLY ADMISSIBLE

The court of appeals majority held that Kendall Oney's identification of Defendant as the robber was constitutionally inadmissible under the state due process standard articulated in *State v. Ramirez*, 817 P.2d 774, 781-82 (Utah 1991). *State v. Lujan*, 2015 UT App 199, ¶¶11-15. The dissent concluded otherwise, opining that if the identification testimony in *Ramirez* was admissible, so too is the testimony in this case. *Id.* at ¶31.

Both the majority and the dissent urged review of the *Ramirez* standard for the admissibility of eyewitness identification testimony, citing its age, the continuing legal and scientific concerns about the reliability of eyewitness identifications, and the outcome in this case. *Id.* at ¶10, n.1; *id.* at ¶21 (Pearce, J., dissenting). This Court should clarify the state due process standard announced in *Ramirez* and reverse the court of appeals.

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For the most part, the federal constitution protects defendants from convictions based on unreliable evidence, "not by prohibiting introduction of the evidence, but by affording the defendant means to persuade the jury that the evidence should be discounted as unworthy of credit." *Perry v. New*

Hampshire, 132 S.Ct. 716, 723 (2012) (emphasis added). For example, constitutional safeguards to counter unreliable evidence include “the Sixth Amendment rights to counsel, compulsory process, and confrontation plus cross-examination of witnesses.” *Id.* (citations omitted).

The same holds true under the Utah Constitution. Under article I, section 12, defendants “have the right to appear and defend ... by counsel, ... to be confronted by the witnesses against” them, and “to have compulsory process to compel the attendance of witnesses” on their behalf. Utah Const. art. I § 12. And this Court has recently added to this arsenal of weapons by requiring the admission of expert testimony on the fallibility of eyewitness identifications in stranger identification cases. See *State v. Clopten*, 2009 UT 84, ¶49, 223 P.3d 1103 (“*Clopten I*”).

Typically, then, the reliability of evidence is left for the jury to test through the crucible of trial, with all of its safeguards for determining the truth. *Perry*, 132 S.Ct. at 723. There is a rare exception—when improper police conduct renders the evidence so unreliable that its admission can be said to deny a defendant his due process right to a fair trial. For example, suppression is constitutionally required when a confession is prompted by police interrogation techniques that “‘are so offensive to a civilized system of justice that they must be condemned.’” *State v. Rettenberger*, 1999 UT 80,

¶11, 984 P.2d 1009 (quoting *Colorado v. Connelly*, 479 U.S. 157,163 (1986)). Similarly, suppression is constitutionally required where an identification results from a police identification procedure that is “unnecessarily suggestive and conducive to *irreparable mistaken identification as to deny the accused a fair trial.*” *State v. McCumber*, 622 P.2d 353, 357 (Utah 1985) (emphasis added).

A. A defendant’s due process rights under the Utah Constitution are not implicated absent State conduct.

At the outset, it is important to clarify that due process concerns under the Utah Constitution do not arise absent State conduct. This Court has never suggested that an eyewitness identification not prompted by the police implicates state due process. Indeed, almost every case before this Court that has addressed the state constitutional admissibility of an eyewitness identification has involved at least an “arguably suggestive” police identification procedure. See *Ramirez*, 817 P.2d at 777-84 (addressing admissibility of identification following one-person showup arranged by police); see also *State v. Hollen*, 2002 UT 35, ¶¶9-11, 29-64, 44 P.3d 794 (admissibility of identification following police lineup); *State v. Hoffline*, 2001 UT 4, ¶¶7,13-19, 20 P.3d 265 (addressing admissibility of identification following two-person showup arranged by police); *State v. Decorso*, 1999 UT 57, ¶¶7,41-47, 993 P.2d 837 (addressing admissibility of identification

following police lineup); *State v. Willett*, 909 P.2d 218, 224 (Utah 1995) (same); *but see State v. Hubbard*, 2002 UT 45, ¶¶8, 25-30, 48 P.3d 953 (concluding that police-administered photo array presentation not suggestive).

This Court's due process jurisprudence in other contexts has also centered on the concern that government action may result in the deprivation of a defendant's due process right to fundamental fairness. For example, the Court has held that due process concerns may arise when prosecutors engage in "potentially abusive practices" against a criminal defendant. *See State v. Redd*, 2001 UT 113, ¶20, 37 P.3d 1160. The Court has likewise held that due process concerns may arise when a prosecutor destroys or loses exculpatory evidence. *See State v. Tiedemann*, 2007 UT 49, ¶¶39-46, 162 P.3d 1106. Due process concerns do not arise absent government action.

This Court in *Ramirez* likened the standard by which the admissibility of eyewitness identification evidence is determined to the standard applied when considering the constitutional admissibility of a confession. *Ramirez*, 817 P.2d at 778. Under that standard, the trial court acts as a "gatekeeper to carefully scrutinize proffered evidence for constitutional defects." *Id.* Significantly, "[a]bsent police conduct causally related to the confession,

there is simply no basis for concluding that any state actor has deprived a criminal defendant of due process of law.’’⁴ *Rettenberger*, 1999 UT 80, ¶18 (quoting *Connelly*, 479 U.S. at 164). This Court should thus recognize, that absent police conduct related to an identification, there is no basis for concluding that any state actor has deprived a criminal defendant of state due process of law.

As the United States Supreme Court recently explained in discussing the federal model, “the potential unreliability of a type of evidence does not alone render its introduction at the defendant’s trial fundamentally unfair.” *Perry*, 132 S.Ct. at 728. Simply put, “[t]he fallibility of eyewitness evidence does not, without the taint of improper state conduct, warrant a due process rule requiring a trial court to screen such evidence for reliability before allowing the jury to assess its creditworthiness.” *Id.* The purpose of the due process requirement “is not to displace the adversary system as the primary means by which truth is uncovered, but to ensure that a miscarriage of justice does not occur.” *United States v. Bagley*, 473 U.S. 667, 675 (1985). That is, a miscarriage of justice that results from State conduct. *See Perry*, 132 S.Ct. at 726 (observing that the very purpose of the “due process check” is

⁴ The Court has not articulated a state due process standard for confessions different from the federal standard.

“to avoid depriving the jury of identification evidence that is reliable, *notwithstanding* improper police conduct”).

Absent some police misconduct, a defendant’s right to a fair trial is fully protected by the constitutional safeguards of effective counsel, compulsory process, confrontation, cross-examination, and the requirement that the State prove a defendant’s guilt beyond a reasonable doubt. *Id* at 728-29. Added to that, this Court has now recognized a defendant’s right to call qualified experts to educate the jury on factors that may affect the reliability of eyewitness identifications. *See Clopten I*, 2009 UT 84, ¶49. These measures, together with the rules of evidence, are more than sufficient to protect criminal defendants from convictions based on unreliable evidence. *See Perry*, 132 S.Ct. at 729 (noting protection afforded by eyewitness expert testimony recognized in *Clopten I*).

In sum, like federal due process, state due process does not require a preliminary judicial inquiry into the reliability of an eyewitness identification not prompted by police conduct. Rather, the safeguards against conviction based on unreliable evidence rest in the trial rights of article I, section 12, and the rules of evidence.

B. *Ramirez* did not purport to abandon the conditional two-step approach of the federal model.

Historically, Utah courts examined the constitutional admissibility of an eyewitness identification under the federal due process standard. *See Ramirez*, 817 P.2d at 779. In *Ramirez*, the Court adopted a somewhat different standard under state due process. *Id.* at 780. But the principle underlying both standards remained the same—a suggestive identification procedure administered by the police might render an identification so unreliable that its admission can be said to deny a defendant his due process right to a fair trial.

1. The federal due process model is a conditional two-step analysis.

Before *Ramirez*, this Court had “simply applied the federal analytical model for determining the reliability, and hence the admissibility” of an eyewitness identification. *Id.* at 779. The federal model involves a conditional two-step analysis. As a threshold matter, a court must determine whether the police used an “unnecessarily suggestive” identification procedure in obtaining the out-of-court identification. *Neil v. Biggers*, 409 U.S. 188, 197-99 (1972). If not, the court’s due process inquiry ends. *See id.* But if police do employ an unnecessarily suggestive identification procedure, the court proceeds to step two—it must determine

"whether under the 'totality of the circumstances' the identification was [sufficiently] reliable even though the confrontation procedure [employed by police] was suggestive." *Biggers*, 409 U.S. at 199.

When assessing the reliability of a tainted identification under step two of the federal model, courts must consider the "totality of the circumstances" surrounding the tainted identification in light of five reliability factors:

[1] the opportunity of the witness to view the criminal at the time of the crime, [2] the witness' degree of attention, [3] the accuracy of the witness' 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.

Biggers, 409 U.S. at 199-200; accord *Ramirez*, 817 P.2d at 779. The "*Biggers* factors" are "weighed [against] the corrupting effect of the suggestive identification itself" to determine whether "there is 'a very substantial likelihood of irreparable misidentification.'" *Manson v. Brathwaite*, 432 U.S. 98, 114, 116 (1977) (quoting *Simmons v. United States*, 390 U.S. 377, 384 (1968)). If so, the identification is constitutionally inadmissible. But "[s]hort of that point, such evidence is for the jury to weigh." *Id.* at 116.

2. *Ramirez* sought only to replace the *Biggers* factors with the *Long* factors.

In purporting to follow *Ramirez*, the court of appeals applied a state due process model not contemplated by *Ramirez*. Rather than applying a conditional two-step analysis, the court of appeals treated the suggestiveness of police identification procedures and the overall reliability of an identification as a single inquiry which could result in suppression under state due process. *See Lujan*, 2015 UT App 199, ¶¶11-15.

In articulating its approach for determining the constitutional admissibility of an identification, the court of appeals purported to do no more than summarize the *Ramirez* analysis. *See id.* But *Ramirez* did not suggest such a fundamental departure from the federal analysis. To be sure, *Ramirez* broke “new ground under the Utah Constitution” in assessing the constitutional admissibility of eyewitness identifications. *Ramirez*, 817 P.2d at 778. But the state analytical model adopted in *Ramirez* only “diverges somewhat” from the federal model. *Id.* *Ramirez* did not take issue with the conditional two-step approach of the federal model. Rather, it only faulted the federal standard used for judging the reliability of

"arguably suggestive eyewitness identifications" under step two of the federal model.⁵ *Id.* at 779-81.

Ramirez rejected the *Biggers* factors for step two as "scientifically unsupported" for assessing the reliability of an identification. *Ramirez*, 817 P.2d at 780. In their place, *Ramirez* required an appraisal of a suggestive identification's reliability based on the "different criteria" identified in *State v. Long*, 721 P.2d 483 (Utah 1986):

"(1) [T]he opportunity of the witness to view the actor during the event; (2) the witness's degree of attention to the actor at the time of the event; (3) the witness's capacity to observe the event, including his or her physical and mental acuity; (4) whether the witness's 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."

817 P.2d at 780-81 (quoting *Long*, 721 P.2d at 493). The *Long* factors, the Court held, "more precisely define the focus of the relevant inquiry" into reliability. *Id.* at 781.

The *Ramirez* court misapprehended the federal due process model in one respect. The Court stated that the element of "suggestibility" included in the fourth *Long* factor has "no comparable emphasis given to [it] by

⁵ Here, the court of appeals misinterpreted *Ramirez* to mean the appropriate analysis under the state constitution consists of only step 2.

Biggers.” *Ramirez*, 817 P.2d at 781. That is incorrect. *Long*’s “suggestibility” inquiry is, in fact, the focus of step one under the federal due process model and the subject against which the *Biggers* factors are weighed under step two. See *Brathwaite*, 432 U.S. at 114 (“Against these factors is to be weighed the corrupting effect of the suggestive identification itself.”).

In sum, *Ramirez* did not suggest that a trial court’s role in screening identification evidence “for constitutional defects” includes a general reliability analysis absent a suggestive police identification procedure. See 817 P.2d at 778. It “depart[ed] from federal case law *only to the degree that*” some of the *Biggers* criteria rendered “*the federal analytical model scientifically unsupported.*” *Id.* at 780 (emphasis added). But see *Hubbard*, 2002 UT 45, ¶25 (suggesting that suggestive police procedures and general unreliability of evidence are independent bases for excluding eyewitness identifications).

C. This Court should clarify its state due process analysis.

Because *Ramirez* did not purport to eliminate step one of the federal analysis, this Court should clarify *Ramirez* to prevent further confusion about and misapplication of the state due process analysis. This Court should clarify that, like the federal due process model, the state due process model involves a conditional two-step analysis incorporating the *Long* factors.

1. Step One—assessing the suggestiveness of the police identification procedure.

First, a defendant seeking the exclusion of an eyewitness identification must establish that police used an “unnecessarily suggestive” identification procedure, *Biggers*, 409 U.S. at 197-99, or, at a minimum, an “arguably suggestive” identification procedure, *Ramirez*, 817 P.2d at 779.⁶ This step embraces the fourth *Long* factor addressing “suggestibility.” See *Ramirez*, 817 P.2d at 781; *Long*, 721 P.2d at 493 (asking whether “witness’s identification was made spontaneously and remained consistent thereafter, or whether it was the product of suggestion”). If a defendant meets that burden, the court may proceed to step two. But if not, the witness’s identification should be submitted to the jury without further inquiry by the trial court.

2. Step Two—weighing the *Long* factors against the suggestiveness of the police identification procedure.

Second—if the defendant satisfies step one—the trial court should then weigh the *Long* factors (except the fourth factor) against the suggestiveness of the police identification procedure itself (as assessed under the fourth *Long* factor). See *Brathwaite*, 432 U.S. at 114. The question

⁶ *Ramirez* could be read to imply that rather than showing that the identification procedure was unnecessarily suggestive, the defendant need only show that it was “arguably suggestive.” 817 P.2d at 779.

here is “whether under the ‘totality of the circumstances’ the identification was [sufficiently] reliable even though the confrontation procedure [employed by police] was suggestive.” *Biggers*, 409 U.S. at 199; accord *Hubbard*, 2002 UT 45, ¶30 (holding that proper inquiry is whether identification “is sufficiently reliable such that it can be presented to the jury for their deliberation”).

This Court has held that in weighing the *Long* factors, trial courts must determine whether the identification “was sufficiently reliable so as not to offend defendant’s right to due process by permitting clearly unreliable identification testimony before the jury.” *Id.* The Court has not expounded on the “clearly unreliable” standard. But it appears to be the equivalent of the federal due process standard—the defendant must show “‘a very substantial likelihood of irreparable misidentification.’” *Brathwaite*, 432 U.S. at 116 (quoting *Simmons*, 390 U.S. at 384). It is a heavy burden, as the outcome in *Ramirez* makes clear. There, the Court held that the eyewitness identification was sufficiently reliable notwithstanding the “blatant suggestiveness” of the one-man showup and the relatively poor witnessing conditions surrounding the crime (no one ever saw the perpetrator’s full face). *Ramirez*, 817 P.2d at 784.

In sum, an eyewitness identification should be excluded only if the weighing under step two results in a determination that notwithstanding the suggestive police identification procedure, the identification was clearly unreliable, i.e., “there is ‘a very substantial likelihood of irreparable misidentification.’” *Brathwaite*, 432 U.S. at 116 (quoting *Simmons*, 390 U.S. at 384). Short of that, “[c]ourts need not, nor should they, step into the province of the jury and decide the ultimate matter of identification for the jurors.” *Hubbard*, 2002 UT 45, ¶30. It certainly should not do so as a constitutional matter. This is particularly true where the constitution and rules of evidence equip a defendant with the tools necessary to challenge unreliable evidence.

D. Kenneth Oney’s identification of Defendant as the robber was not constitutionally unreliable.

Like *Ramirez*, the showup identification of Defendant in this case was suggestive. But unlike *Ramirez*, the eyewitness testified that it was not the basis for his identification. And unlike *Ramirez*, the witnessing conditions here were eminently more reliable. As the dissent noted, one has to “squint at *Ramirez’s* holding” to conclude otherwise. *Lujan*, 2015 UT App 199, ¶ 21. When the suggestiveness of the arrest-site lineup (*Long’s* fourth factor) is weighed against the remaining *Long* factors, it cannot be said that there was

a very substantial likelihood of irreparable misidentification. This Court should thus reverse the court of appeal's ruling to the contrary.

1. The arrest-site identification was at least arguably suggestive.

As explained, the first step in the due process inquiry is whether Oney's identification of Defendant at the arrest site "'was the product of suggestion,'" *Ramirez*, 817 P.2d at 781 (quoting *Long*, 721 P.2d at 493), and if so, to what extent. As explained, this inquiry embraces the fourth *Long* factor. The variables subject to consideration under this inquiry are usefully divided into two categories: (a) the circumstances of the identification procedure itself that may be suggestive (procedural factors), and (b) witness behavior that may signal that the identification was the product of suggestion rather than memory (witness factors). A review of these circumstances shows that Oney's arrest-site identification was less suggestive than in *Ramirez*. However, even if it was equally suggestive, the inquiry does not end.

(a) Procedural factors of arrest-site identification.

Relevant factors in evaluating the circumstances surrounding the identification procedure include "the length of time between observation and identification, ... the value of lineups compared to showups, the value of photo identifications compared to in-person identifications," and

potentially suggestive police conduct, such as the instructions given to the eyewitness by police, the composition of the lineup, the way in which the lineup was carried out, and the behaviors of the person conducting the lineup." *Clopton I*, 2009 UT 84, ¶32 n.22; accord *Ramirez*, 817 P.2d at 783 (citing *Long*, 721 P.2d at 494, n.8).

A showup is often considered "inherently suggestive because it involves the presentation of a single suspect to a witness by the police (as opposed to a lineup, in which several individuals are presented to the police, only one of whom is the suspect)." *Brisco v. Ercole*, 565 F.3d 80, 88 (2nd Cir. 2009). Such was the case in *Ramirez*: the witness's identification of Ramirez "took place on the street in the middle of the night. Ramirez, with dark complexion and long hair, was the only person at the showup who was not a police officer. He stood with his hands cuffed to a chain link fence behind his back. [And the] headlights of several police cars were trained on him." *Ramirez*, 817 P.2d at 784. The showup in *Ramirez* was a blatantly suggestive procedure. *Id.*

As in *Ramirez*, the identification here was made soon after the robbery — within 20 minutes — but that fact is a favorable factor. R357:106-07. According to Defendant's expert, a short interval improves accuracy. R358:52. The field identification was also similar. Like *Ramirez*, Defendant

was presented to Oney in the early hours of the morning, was the only non-officer present, was handcuffed, was accompanied by police officers, and was illuminated by the headlights of police cars. R357:49-51.

(b) Witness factors.

Relevant factors in evaluating witness behavior that might indicate an identification was the product of a suggestive procedure include (1) spontaneity and consistency in making the identification, (2) a weakened or compromised mental capacity and state of mind at the time of the identification, (3) "instances when the witness or other eyewitnesses to the event failed to identify defendant," and (4) "instances when the witness or other eyewitnesses gave a description of the actor that is inconsistent with defendant." *Ramirez*, 817 P.2d at 781, 783. Witness confidence is another relevant factor that may be examined. *See State v. Guzman*, 2006 UT 12, ¶23, 133 P.3d 363 (holding that courts may also "weigh certainty testimony" in assessing reliability, even though not required to be considered under *Ramirez*).

No one established Oney's state of mind at the time of the showup. Oney said he was "pretty distraught" when police arrived within five minutes of his call to 911. R357:91. He identified Defendant at the showup approximately 20 minutes after that. R357:106-07. By that time, he had not

only gotten an immediate response to his 911 call and explained the situation to the officers, but he had recovered his stolen car. Such a fast and positive development would go far in soothing any remaining anxiety. Nothing suggested that he was emotional or distraught at the time. Further, Oney made his identification from the safety and anonymity of the police cruiser, eliminating any potential fear from the possibility of reprisal if the suspect saw him. R537:93. When asked if Defendant was the robber, Oney immediately answered "yes," noting that it was "definitely him." R357:93-94, 135-36. No one suggested that he make a positive identification, and on the way over he was simply told that they had "probably found the suspect." R357:91-92. Oney's quick, positive identification suggests that it was the product of memory, not suggestion. *See Hubbard*, 2002 UT 45, ¶28 (recognizing that spontaneous identification supports finding of reliability). Unlike *Ramirez*, he confirmed as much, explaining that he identified Defendant because of his looks, not because of the setting in which the identification took place. R357:49-50. 94-95, 106-07. And although witness confidence is no guarantee of accuracy, Oney's certainty was a factor that made it slightly more likely that the identification was reliable. *See Guzman*, 2006 UT 12, ¶22 (recognizing eyewitness confidence as factor favoring reliability).

Oney consistently identified Defendant as the robber after the showup, although with somewhat less confidence at the lineup four months later. He picked Defendant because he remembered his eyes and thought his goatee looked familiar. R357:63-64. However, he hesitated because he believed the robber would not be in the lineup based on a phone call he had received the previous day and because he thought another person in the lineup "looked familiar." R357:60-64. Consequently, he chose both men. *Id.* He later positively identified Defendant at the preliminary hearing and at trial. *See* R355:5-6; R357:20. His partial identification may adversely impact the reliability of his identification to some degree, but that is only one of the relevant considerations.

Finally, the inconsistencies in Oney's descriptions of the robber—the hair, the jacket, and the goatee—were reasonably explained. Through Defendant's expert, the prosecutor established that lighting and proximity can both obscure or distort things. R358:56-57. And officers corroborated the existence of the jacket at the arrest site.

In sum, the arrest-site identification procedure employed by police in this case was less suggestive than the showup in *Ramirez*, where one of three victims sat in a police car and positively identified Ramirez as the masked man who robbed him earlier in the night while Ramirez was alone

and chained to a fence at one in the morning in the headlights of police cars. 817 P.2d at 777. While the procedural factors of the arrest-site identification paralleled those present in *Ramirez*, the witness factors demonstrate that Oney's identification was the product of memory, not suggestion. Most significantly, unlike *Ramirez*, Oney expressly stated that his identification of Defendant at the showup was based on his memory of the robber, not the circumstances surrounding the showup.

But even if it were unnecessarily suggestive, when weighed against the *Long* factors – which this Court in *Ramirez* found to be more scientifically sound than the *Biggers* factors – it does not produce “a very substantial likelihood of irreparable misidentification.” *Braithwaite*, 432 U.S. at 114, 116 (citation and quotation omitted).

2. Witnessing conditions at the crime scene.

Even if the identification procedure were suggestive, an evaluation of the *Long* factors against the suggestiveness of the identification procedure (to whatever extent that was) establishes that the identification was “sufficiently reliable so as not to offend defendant's right to due process.” *Hubbard*, 2002 UT 45, ¶30.

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As explained, step two requires courts to weigh the remaining *Long* factors against the suggestive influence of the identification procedure. Although *Long* identifies four remaining factors, they are better understood as “witnessing conditions,” with the last two factors combining to reflect a single condition: (1) “the opportunity of the witness to view” the perpetrator during the crime; (2) “the witness’s degree of attention” to the perpetrator at the time of the crime; and (3) the witness’s “capacity” to reliably identify the perpetrator given “the nature of the event being observed” and the witness’s “physical and mental acuity.” *Long*, 721 P.2d at 493. Courts should weigh these witnessing conditions to determine “the likelihood that the witness would perceive, remember and relate” the event correctly. *Id.*

(a) Opportunity to view robber during the robbery.

The first witnessing condition is the witness’s opportunity to view the perpetrator during the crime. *Ramirez*, 817 P.2d at 781. Relevant factors include overall visibility, such as lighting and obstructions; the distance between the witness and the actor; the length of time the witness viewed the actor; and whether the witness could see the actor’s face, which may be adversely affected if the actor is wearing a disguise, such as a mask, hat, or sunglasses. *Id.* at 782; *see also Clopten I*, 2009 UT 84, ¶32 n.22; Gary L. Wells,

Amina Memon, & Stephen D. Penrod, *Eyewitness Evidence: Improving its Probative Value*, 7 *Psychological Science in the Public Interest* 45, 53-54 (2006) ("Wells, Memon, & Penrod"); Gary L. Wells & Elizabeth Olson, *Eyewitness Testimony*, 54 *Ann. Rev. Psychol.* 277, 281 (2003) ("Wells & Olson") (in Addendum D).

Although the robbery occurred at 3:30 in the morning, Oney had ample opportunity and ability to see the robber. His initial contact with the robber occurred at close range—from about ten inches—within the confines of Oney's car door under the car's "[f]airly bright" interior lighting. For a full ten seconds, Oney was face to face with the robber's undisguised face under the dome and dashboard lights. When the two stood, Oney had the benefit of several illumination sources in which to see the robber's unmasked face, including the car's headlights, a nearby porch light, two street lights, and a neighbor's flood light. Although the lights were not directed at the robber's face, the bare trees permitted the maximum amount of light from each source to reach the area, resulting in "pretty bright" illumination. R357:18-19, 22-23, 25-29, 30-35, 67-72; State's Exhs. 9, 16-19. Oney kept his eyes on the robber throughout the ordeal, talking calmly to him. Standing face-to-face and almost touching, Oney moved slowly

around the robber and the car, with the robber keeping pace with him and ultimately moving into the car's headlights.

Despite the close proximity, Oney did not initially mention Defendant's untrimmed salt and pepper goatee until expressly asked about facial hair at the preliminary hearing. The omission does not necessarily demonstrate that Oney lacked sufficient opportunity to make a reliable identification. Officer Bias admitted cutting short his initial investigation with Oney to follow the liquid trail left by the stolen car, suggesting Oney may not have gotten to that part of his identification and did not need to revisit it once Defendant was arrested. Until questioned about it at the preliminary hearing, Oney had no reason to believe he had omitted anything from his description of the robber. Moreover, while the lighting and proximity were sufficient to see the robber's face, they may have been insufficient to permit Oney to see the delineation between Defendant's face and his "scraggly" salt and pepper facial hair. See R358:56 (expert admission that things may be obscured by close proximity); R358:57 (expert opinion that features may be obscured depending on the lighting). As the lighting was not directed at the robber's face throughout the ordeal, any resulting shadows could effectively minimize the differences between the robber's face and his facial hair.

Additionally, Oney described the robber as wearing a black beanie that fit tight to his skull, obviously preventing Oney from realizing that the robber had a shaved head. He also believed he saw long, straight hair sticking out of the bottom of the beanie, although Defendant had none at the time of his arrest. Again, the mistake does not necessarily demonstrate that Oney lacked sufficient opportunity to make a reliable identification. Defendant's expert recognized that perception and ability to pick out features may change based on any number of factors, including distance and lighting. R358:54-57. Here, the close proximity of the men's faces during the initial seconds of their interaction, Oney's fixation on the robber's face, and the multidirectional lighting both at the car door and outside, either individually or combined, could be expected to obscure some features but not others. Defendant's expert did not rule out the possibility that, in the right lighting, a stand-up collar on the robber's shirt or jacket could give the impression of long, straight hair. *See* R358:57.

Finally, Oney's repeated assertion that the robber wore a black leather coat strengthened his credibility. Oney consistently explained throughout this case that the robber wore a longish black coat, beginning with his first report to police and continuing through trial. He also maintained that Defendant was wearing the coat when he identified Defendant at the arrest

site. It is true that the jacket did not make it through processing at the jail and, hence, could not be produced at trial. But two officers who dealt with Defendant at the arrest site also testified that he was wearing a black jacket. Their testimony not only corroborated Oney's description but reinforces the fact that Oney's close proximity to the robber, the indirect lighting and Oney's focus on the robber's face and hands provided him with ample opportunity to accurately view the robber.

(b) Degree of attention Oney gave to robber.

The second witnessing condition is the witness's "degree of attention" to the perpetrator at the time of the crime. *Ramirez*, 817 P.2d at 781. Relevant factors include when the witness becomes aware that a crime is being committed, the amount and type of attention that the witness gives to the perpetrator, and the presence of distractions that may draw a witness's attention away from the perpetrator, e.g., noises or other activity. *See id.* (citing *Long*, 721 P.2d at 423). Distractions may include the presence or use of a weapon, which laboratory research has shown may result in modest impairment to identification accuracy.⁷ Wells, Memon, & Penrod,

⁷ Although the Court in *Long* and *Ramirez* placed distractions under the "opportunity to observe" factor, it is more appropriately analyzed here because distractions do not deprive the witness of the opportunity to observe; rather, they compete for the witness's attention during that window of opportunity.

supra, at 53. On the other hand, the findings of field research on weapon focus have been "somewhat conflicting." *Id.*

Oney's awareness of the robber was immediate, with the robber physically placing himself in Oney's face while Oney sat in the confines of his driver's seat. Oney's attention focused solely on Defendant from that moment and remained there throughout the entire ordeal. The robber did not run or attempt to hide but remained facing Oney without a disguise.

Until the robber stood, Oney gave him his full attention without concern for either a weapon or any criminal conduct: the robber had Oney's full attention. Although the robber reached for the handle of something once he stood up, he did not withdraw the item and at no time did he brandish, let alone use, a weapon. Oney noticed the movement, which prompted him to include the robber's hands in his visual field and to formulate a mental escape plan. He did not look away from the robber, however, and he remained so focused on the robber that his memory included the robber's conversation. No external noises or distractions prompted Oney to divert or diminish his attention on the robber.

(c) Oney's capacity to observe the robber given the nature of the event.

The final witnessing condition is the witness's capacity to reliably identify the perpetrator given the nature of the event being observed and

the witness's physical and mental acuity. *Long*, 721 P.2d at 493. Relevant factors include the witness's age (research has shown that very young children and the elderly perform worse than other adults); the witness's physical limitations, such as uncorrected visual defects, fatigue, injury, intoxication, or extremely low intelligence; the witness's emotional state; the witness's personal motivations, biases, or prejudices; the distinctiveness of the perpetrator's appearance; and the race of the witness relative to the race of the perpetrator. *See id.*; *see also Clopten I*, 2009 UT 84, ¶32 n.22. Also relevant is whether the witness's capacity to observe was impaired by stress or fright at the time of the observation. *Clopten I*, 2009 UT 84, ¶32 n.22.

Oney's physical abilities were not in any way impaired at the time of the robbery. He had not been drinking, there was no evidence of fatigue, and he was wearing his glasses at the time. R357:108-09. There was no evidence of any other mental or physical concerns or limitation that would adversely affect his capacity to reliably identify the robber. Neither was there evidence of "weapon-focus effect" that tends to decrease the reliability of eyewitness identification. *See* R358:26-32; Wells & Olson, at 282, *supra*. There was no weapon or other express threat used in the robbery. Oney believed the robber reached for what might have been a weapon at one point, but no weapon was ever produced. In any event, prior to that time,

Oney had no reason to suspect the robber possessed a weapon. And regardless of that possibility, Oney remained calm and in control through the remainder of the encounter, quickly creating and executing an escape plan and calmly talking to the robber until he succeeded in his escape.

Additionally, nothing in the circumstances surrounding the identification or involving Oney himself suggests that he suffered such a heightened degree of stress that it rendered his identification suspect. See R358:26-32. While Oney was surprised at the robber's sudden appearance, nothing about the situation at that point suggested he suffered any undue stress from the man's presence: he simply thought the robber might want a drink or a ride. R357:18. It was nowhere near the heightened stress of *Ramirez*, where the witness was struck once and nearly twice with a pipe, was continually threatened with the pipe while another robber pointed a gun at him and issued more threats. 817 P.2d at 783. Arguably, under the circumstances, any fear Oney harbored did not raise to even the "ordinary fear" of a victim, which would not prevent the accurate observation and perception of events. *State v. Rivera*, 954 P.2d 225, 228 (Utah App. 1998) (victim's ordinary fear is not alone sufficient to defeat the third *Ramirez* factor).

Finally, Oney did not have the same racial background as Defendant, which may create a slightly higher risk of misidentification. *See* R358:58; Wells & Olson, at 280-81 (despite extensive examination, “no consistent overall differences attributable to race have emerged;” we simply know people are better able to recognize faces of their own race). On the other hand, a witness’s prior exposure to the offender’s race is a factor to be considered in assessing their ability to make an accurate identification. R358:49.

Oney was forty years old, had lived in the same area for fourteen or fifteen years, and had lived in the same neighborhood for two. R357:15-16, 100-01. A number of his neighbors were Hispanic, including those on either side and across the street, giving him an easy familiarity with their features. R357:44. His familiarity with the characteristics of Hispanics generally would tend to counter concerns of cross-racial bias. The court of appeals made no mention of this fact, however. Instead, the majority of that court determined that Oney’s close, unobscured exposure to the robber’s entire face was a barrier to an accurate identification of the robber solely because of the concern for cross-racial bias. Proper consideration of Oney’s familiarity with Defendant’s race along with the duration and proximity of

the viewing in the lighted confines of the car door weigh in favor of a reliable identification.

* * *

In sum, the witnessing conditions were not so poor as to create a due process concern. The witnessing conditions were better than those in *Ramirez*, where most of the gunman's face was covered with a scarf and the witness was the object of an assault and threatened assault with a gun. *Ramirez*, 817 P.2d at 782-83. Indeed, the witnessing conditions were, in most respects, much better than those in most crimes—the robber was wearing distinctive clothing but no mask, brandished no weapon, made no threats, and approached the victim in close proximity under numerous light sources. When these witnessing conditions are weighed against the arrest-site showup, it cannot be said that there was a very substantial likelihood of irreparable misidentification. Accordingly, any reliability concerns were properly left for the jury to decide.

Indeed, the jury had before it all the tools necessary to assess the reliability of Oney's identification testimony: the testimony of the defense expert on factors affecting the reliability of identifications, a jury instruction on point, and the argument of both counsel in closing, all of which informed the jurors in their consideration of the identification evidence. Defendant

adduced the expert's testimony objection-free and without limitation and argued his testimony in closing. Defendant took advantage of every opportunity provided for testing the reliability of the evidence and influencing the jury's consideration of it. Thus, even though the showup was arguably as suggestive as the one conducted in *Ramirez*, the identification was subject to comprehensive scrutiny by the jury, in keeping with the continuing development of eyewitness memory science in the years since *Ramirez*.

II.

IN ANY EVENT, ANY ERROR WAS HARMLESS BEYOND A REASONABLE DOUBT

If, as the State contends, Oney's identification was sufficiently reliable to be presented to the jury for their deliberation, this Court's review is ended, and the court of appeals' decision should be reversed. See Point I, *supra*. If, however, this Court determines that under the appropriate application of *Ramirez*, there was "a very substantial likelihood of irreparable misidentification" requiring exclusion of the identification testimony, it must determine whether the error was harmless. *Brathwaite*, 432 U.S. at 116 (quotation omitted).

This Court has yet to squarely decide whether the harmless error standard applicable to a preserved state constitutional error in admission of

eyewitness identification testimony is the erosion of confidence standard or the stricter federal “harmless beyond a reasonable doubt” standard. The court of appeals’ majority determined that the error must be reviewed under the same standard that applies to federal constitutional due process errors. 2015 UT App. 199, ¶16 & n.2 (citing *Chapman v. California*, 386 U.S. 18, 24 (1967)). They did so based on this Court’s recognition in *Ramirez* that Utah’s state constitutional due process analysis “is certainly as stringent as” the federal analysis. *Lujan*, 2015 UT App 199, ¶16, n.2. However, this Court went on to require that Ramirez demonstrate “a reasonable likelihood of a more favorable result had the identification not been admitted.” *Ramirez*, 817 P.2d at 788. The same standard has since been repeatedly applied. See *State v. Nelson*, 950 P.2d 940, 944 (Utah App. 1997); see also *State v. Clopten*, 2009 UT 84, ¶39.

Because the issue of whether the burden shifts to the State to prove that a preserved state constitutional error in admission of eyewitness identification testimony is harmless beyond a reasonable doubt is a matter of first impression, it should be decided by this Court. See Utah R. App. P. 46(a)(4). See also *Lujan*, 2015 UT App 199, ¶16, n.2 (explaining majority’s reasoning for applying federal prejudice standard without prior direction by this Court).

There is, however, no reason to reach that issue in this case because even assuming application of the federal standard, any error in admitting Oney's identifications was harmless beyond a reasonable doubt.

Factors that determine whether an error was harmless beyond a reasonable doubt include "the importance of the witness' testimony in the prosecution's case, whether the testimony was cumulative, the presence or absence of evidence corroborating or contradicting the testimony of the witness on material points, the extent of cross-examination otherwise permitted, and, of course, the overall strength of the prosecution's case." *State v. Villarreal*, 889 P.2d 419, 425-26 (Utah 1995) (quotation omitted).

Even without Oney's identification of Defendant, the jury would still have the benefit of his description of the robber, the bases for his description—unchallenged by expert testimony criticizing the reliability of his observations—and corroboration from Officer Bias that he believed Defendant matched the description and from both Officer Bias and Officer Deven Mayer that Defendant was wearing a black jacket when he was found. The prosecutor would provide the same explanations for the discrepancies involving the hair, goatee, and black jacket. The jury would also have the string of events that led the officers to the car and the school yard within minutes of the robbery, the dog's immediate discernment of a

lone scent leading down the pathway and through the school yard in the very direction officers later found the only person in the area, as well as the timing of the noise indicating the suspect jumped a fence just as the officer began following the dog through the school yard. Officer Bias would explain how the dog led officers toward the school but was stopped short of the school to do a safety sweep of the portable classrooms that they necessarily passed on their way to the school.⁸ Instead of waiting to complete the sweep, Officer Bias continued in the direction the dog had indicated, rounded a corner of the school, and found Defendant. Moreover, despite establishing an immediate containment zone, no one but Defendant was found anywhere in the area.

In addition, the jury would hear the circumstances surrounding Defendant's discovery and arrest at the school, including the indications that he was hiding in an out-of-the-way place requiring the use of a flashlight to see him, the fact that he stared at the officers while refusing to obey their repeated commands to come out of the unit yet claimed

⁸ The court of appeals' majority suggests that the dog led the officers to the classrooms and stopped instead of leading them to the school. 2015 UT App 199, ¶18. That interpretation is not supported by the record evidence. R357:128-29, 145-47; R359:17-18, 26-28; State's Exhs. 27 & 28. The dog was stopped for safety reasons at outbuildings located on their path to the school. Nothing suggests the dog initiated the stop.

thereafter that he called police to come to his aid. Those circumstances strongly suggest that Defendant was hiding from the visible police presence. Further, he was found in possession of a knife, corroborating Oney's testimony that he reached for something tucked in his waistband. And finally, they would have the condemningly similar words uttered by the robber and by Defendant that someone was "following me."


Given this compelling evidence, any error in the admission of Oney's identification testimony was harmless beyond a reasonable doubt.

CONCLUSION

For the foregoing reasons, the Court should reverse the judgment of the Court of Appeals.

Respectfully submitted on April 25, 2016.


SEAN D. REYES
Utah Attorney General



KRIS C. LEONARD
Assistant Solicitor General
Counsel for Petitioner

CERTIFICATE OF COMPLIANCE

I certify that in compliance with rule 24(f)(1), Utah R. App. P., this brief contains 11,169 words, excluding the table of contents, table of authorities, and addenda. I further certify that in compliance with rule 27(b), Utah R. App. P., this brief has been prepared in a proportionally spaced typeface using Microsoft Word 2010 in Book Antiqua 13 point.



KRIS C. LEONARD
Assistant Solicitor General

CERTIFICATE OF SERVICE

I certify that on April 25, 2016, two copies of the Brief of Petitioner were ☒ mailed ☐ hand-delivered to:

Lisa J. Remal
Nathalie S. Skibine
Salt Lake Legal Defender Assoc.
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Salt Lake City, UT 84111-3305

Also, in accordance with Utah Supreme Court Standing Order No. 8, a courtesy brief on CD in searchable portable document format (pdf):

☒ was filed with the Court and served on appellant.

☐ will be filed and served within 14 days.

A handwritten signature in black ink, appearing to read "Allison", is written over a horizontal line.

Addenda

Addenda

Addendum A

KeyCite Yellow Flag - Negative Treatment

Certiorari Granted by State v. Lujan, Utah, December 28, 2015

357 P.3d 20

Court of Appeals of Utah.

STATE of Utah, Plaintiff and Appellee,

v.

Manuel Antonio LUJAN, Defendant and Appellant.

No. 20131166-CA.

Aug. 6, 2015.

Synopsis

Background: Defendant was convicted in the Third District Court, Salt Lake Department, Randall N. Skanchy, J., of aggravated robbery. Defendant appealed.

Holdings: The Court of Appeals, Orme, J., held that:

[1] victim's eyewitness identifications of defendant at show-up and in court were not sufficiently reliable to be admissible, and

[2] erroneous admission of eyewitness identification testimony was not harmless.

Reversed and remanded.

Pearce, J., filed dissenting opinion.

West Headnotes (10)

[1] Criminal Law

Identity of Accused

Utah applies a more stringent standard in making eyewitness identification reliability determinations than that employed in the federal system.

Cases that cite this headnote

[2] Criminal Law

Identity of Accused

Five factors must be considered when analyzing the reliability of an eyewitness identification: (1) opportunity of the witness to view the actor during the event, (2) witness's degree of attention to the actor, (3) whether the witness had the capacity to observe the actor during the event, (4) whether the witness's identification was made spontaneously and remained consistent thereafter or whether it was a product of suggestion, and (5) the nature of the event and the likelihood that the witness would perceive, remember, and relate it correctly.

Cases that cite this headnote

[3] Criminal Law

Identity of Accused

For purposes of five-factor analysis for determining reliability of eyewitness identification, the factor concerning the opportunity of the witness to view the actor during the event, includes, but is not limited to, considering the length of time the witness viewed the actor, the distance between the witness and the actor, whether the witness could view the actor's face, the lighting or lack of it, and whether there were distracting noises or activity during the observation.

Cases that cite this headnote

[4] Criminal Law

Identity of Accused

For purposes of five-factor analysis for determining reliability of eyewitness identification, the factor concerning whether the witness had the capacity to observe the actor during the event includes considering whether the witness's capacity to observe was impaired by stress or fright, personal motivations, biases, prejudices, uncorrected visual defects, fatigue, injury, drugs, or alcohol.

Cases that cite this headnote

[5] Criminal Law

Identity of Accused

For purposes of five-factor analysis for determining reliability of eyewitness identification, the factor concerning whether the witness's identification was made spontaneously and remained consistent thereafter or whether it was a product of suggestion, includes considering the length of time that passed between the witness's observation at the time of the event and the identification of the defendant, the witness's mental capacity and state of mind at the time of the identification, the witness's exposure to information from other sources, instances when the witness failed to identify the defendant, instances when the witness gave descriptions that were inconsistent with the defendant, and the circumstances under which the defendant was presented to the witness for identification.

Cases that cite this headnote

[6] **Criminal Law**

☞ Identity of Accused

For purposes of five-factor analysis for determining reliability of eyewitness identification, the factor concerning the nature of the event and the likelihood that the witness would perceive, remember, and relate it correctly, includes considering whether the event was an ordinary one in the mind of the witness and whether the race of the actor was the same as the witness.

Cases that cite this headnote

[7] **Criminal Law**

☞ Confrontations at the scene or shortly after offense or arrest

Criminal Law

☞ In-Court Identification in General

Victim's show-up and in-court eyewitness identifications of defendant were not sufficiently reliable to be admissible in aggravated robbery trial; show-up identification was made when it was dark, defendant was handcuffed, and all others present were police officers, in-court identification was made when defendant was the only defendant sitting at the defense table, victim

failed to identify defendant at the lineup, victim was Native American and identified robber as "Spanish," and victim's original description of robber, with whom he came into close contact during the offense, omitted any mention of facial hair and included a definite recollection of long straight hair, while defendant had a goatee and shaved head.

Cases that cite this headnote

[8] **Criminal Law**

☞ Arrest and identification, evidence relating to

Error in admission of victim's unreliable show-up and in-court eyewitness identifications was not harmless, in prosecution for aggravated robbery; victim's identification of defendant was State's strongest evidence against defendant, and without the identifications, jurors would likely have found very significant victim's description of suspect, which described suspect as having long black and white hair although defendant had clean-shaven hair at time of his arrest, and evidence that a trained police dog following suspect's scent pulled officers toward portable classrooms at elementary school where officers found victim's abandoned car, while the officers who arrested defendant veered off from K9 unit and found defendant curled up in an air conditioning unit in a different part of the school.

Cases that cite this headnote

[9] **Criminal Law**

☞ Rulings as to evidence

The State bears the burden of convincing the appellate court that improperly admitted eyewitness identifications were harmless beyond a reasonable doubt.

Cases that cite this headnote

[10] **Criminal Law**

☞ Evidence in general

Criminal Law

☞ Curing Error by Facts Established

Otherwise

For the appellate court to determine that the trial court's error in admitting testimony was harmless beyond a reasonable doubt, the appellate court must consider the importance of the witness's testimony in the prosecution's case, whether the testimony was cumulative, the presence or absence of evidence corroborating or contradicting the testimony of the witness on material points, the extent of cross-examination otherwise permitted, and, of course, the overall strength of the prosecution's case.

Cases that cite this headnote

Attorneys and Law Firms

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Sean D. Reyes and Kris C. Leonard, Salt Lake City, for Appellee.

Judge GREGORY K. ORME authored this Memorandum Decision, in which Judge KATE A. TOOMEY concurred. Judge JOHN A. PEARCE dissented, with opinion.

Memorandum Decision

ORME, Judge:

¶ 1 Defendant Manuel Antonio Lujan appeals his conviction of aggravated robbery, a first degree felony under section 76–6–302 of the Utah Code. Because we determine that the trial court erroneously admitted unreliable eyewitness testimony, we reverse and remand for a new trial.

¶ 2 Early one November morning, a man could not sleep, so he got out of bed and went outside. He decided to get his car ready for an upcoming safety inspection. It was while the man was seated inside his car in his driveway that he came face-to-face with a robber. The man described the robber as “Spanish” and as wearing a black leather jacket and beanie. The robber had black and white “longish hair,” which was straight and poked out of the beanie to “mid- *22 ear length.” The man “definitely” remembered the robber’s hair.

¶ 3 The robber opened the man’s driver-side door, squatted next to the seat, and asked the man, “Why you following me?” The robber stood, and the man saw him reach for what

appeared to be the handle of a gun or a knife. The man was afraid he might be stabbed or shot. Wanting to return to the safety of his house, the man stood, nearly touching the robber, who was about his same height. He slowly worked his way around the robber and around the car and ran to his house. The robber drove off in the man’s car, and the man told his brother to call the police, which he did. Officers soon arrived.

¶ 4 The man’s car had a fluid leak, and officers were able to follow a trail of fluid and recover the abandoned car a few blocks away, near an elementary school. A K9 unit was called, and the dog appeared to “pick[] up on a track of the person that they [were] looking for” at the walkway gate of the school. The dog pulled the officers through the gate and toward “some portable or relocatable classrooms.” At that point, some officers “kind of split” from the K9 unit, and one of those officers had a “gut feeling” to check an air conditioning unit outside the school, even though the dog was focused elsewhere. Officers found Defendant inside the air conditioning unit, and he told them “something like somebody is following me, somebody is out to get me.”

¶ 5 Defendant is Hispanic, and he had closely-shaven hair and a goatee when the police found him. He was wearing a black beanie. Officers also testified that he was wearing a black jacket, but no jacket appeared in Defendant’s booking photo, was listed on the jail property list, or was produced at trial.

¶ 6 Police contacted the man whose car had been stolen and told him that they had a suspect. They brought the man to the school and asked if he could identify Defendant, who stood handcuffed in the dark, the only non-officer present, illuminated by the headlights of police cars. The man identified Defendant as the robber.

¶ 7 After being arrested and charged, Defendant requested a lineup, which the trial court granted. At the lineup, the man was unable to positively identify anyone as the robber. He did indicate that Defendant and another man looked familiar, but he was unsure whether either was the robber.

¶ 8 At the preliminary hearing, the man was asked to identify the robber, and he pointed to Defendant. As Defendant observes, he “was the only defendant sitting at counsel table and the only realistic choice.”

¶ 9 Defendant moved to exclude evidence of the show-up and in-court identifications. The motion was denied, Defendant was convicted as charged, and he now appeals. The sole

issue raised on appeal is whether the trial court erred when it denied Defendant's motion to suppress the identifications. We conclude that it did.

[1] ¶ 10 In *State v. Ramirez*, 817 P.2d 774 (Utah 1991), the Utah Supreme Court revised and clarified the protocol for courts to use in analyzing the admissibility of eyewitness identifications.¹ See *23 *id.* at 779, 781–82. The Utah Supreme Court indicated that such clarification was necessary because “the scientific literature ... ‘is replete with empirical studies documenting the unreliability of eyewitness identification.’ ” *Id.* at 779 (quoting *State v. Long*, 721 P.2d 483, 488 (Utah 1986)). This led the Court “to comment that ‘[p]erhaps it is precisely because jurors do not appreciate the fallibility of eyewitness testimony that they give such testimony great weight.’ ” *Id.* at 780 (alteration in original) (quoting *Long*, 721 P.2d at 490). Thus, Utah applies a more stringent standard in making reliability determinations than that employed in the federal system. *Id.* at 784. Compare *Neil v. Biggers*, 409 U.S. 188, 199–200, 93 S.Ct. 375, 34 L.Ed.2d 401 (1972) (indicating that “the factors to be considered in evaluating the likelihood of misidentification include the opportunity of the witness to view the criminal at the time of the crime, the witness[s] degree of attention, the accuracy of the witness[s] prior description of the criminal, the level of certainty demonstrated by the witness at the confrontation, and the length of time between the crime and the confrontation”), and *Stovall v. Denno*, 388 U.S. 293, 302, 87 S.Ct. 1967, 18 L.Ed.2d 1199 (1967) (focusing on whether an eyewitness confrontation was “so unnecessarily suggestive and conducive to irreparable mistaken identification that [defendant] was denied due process of law”), with *Ramirez*, 817 P.2d at 781 (listing factors that are “generally comparable to the *Biggers* factors” but “more precisely define the focus of the relevant inquiry,” and identifying the “ultimate question to be determined [as] whether, under the totality of the circumstances, the identification was reliable”).

[2] [3] [4] [5] [6] ¶ 11 In *Ramirez*, the Court set forth five factors that must be considered when analyzing the reliability of an eyewitness identification: (1) opportunity to view, (2) degree of attention, (3) capacity to observe, (4) spontaneity and consistency, and (5) nature of the event. *Ramirez*, 817 P.2d at 781. The first factor, the opportunity of the witness to view the actor during the event, includes (but is not limited to) considering the length of time the witness viewed the actor, the distance between the witness and the actor, whether the witness could view the actor's face, the lighting or lack of it, and whether there were

distracting noises or activity during the observation. *Id.* at 782. The second factor considers the witness's degree of attention to the actor. *Id.* at 781, 783. The third factor, whether the witness had the capacity to observe the actor during the event, includes considering whether the witness's capacity to observe was impaired by stress or fright, personal motivations, *24 biases, prejudices, uncorrected visual defects, fatigue, injury, drugs, or alcohol. *Id.* at 783. The next factor, whether the witness's identification was made spontaneously and remained consistent thereafter or whether it was a product of suggestion, includes considering the length of time that passed between the witness's observation at the time of the event and the identification of the defendant, the witness's mental capacity and state of mind at the time of the identification, the witness's exposure to information from other sources, instances when the witness failed to identify the defendant, instances when the witness gave descriptions that were inconsistent with the defendant, and the circumstances under which the defendant was presented to the witness for identification. *Id.* And the final factor, the nature of the event and the likelihood that the witness would perceive, remember, and relate it correctly, includes considering whether the event was an ordinary one in the mind of the witness and whether the race of the actor was the same as the witness. *Id.* at 781.

¶ 12 The *Ramirez* court considered the first four factors in detail and concluded that it was “an extremely close case.” *Id.* at 784. The Supreme Court was particularly troubled by the “blatant suggestiveness of the showup,” where Ramirez was identified in a very similar fashion to the way Defendant was here—Ramirez “was the only person at the showup who was not a police officer,” he “stood with his hands cuffed,” and the “headlights of several police cars were trained on him.” *Id.* The Court was also concerned with the “differences in racial characteristics between” the eyewitness and Ramirez. *Id.* The Court determined, however, that “because the identification was based principally on the eyes, physical size, and clothing, these racial factors may have been of relatively little importance.” *Id.*

[7] ¶ 13 The same factors that led the Supreme Court to conclude that *Ramirez* was “an extremely close case” are present here. See *id.* The show-up was conducted in almost identical fashion. Furthermore, the man who identified Defendant is Native American and Defendant is Hispanic. But unlike in *Ramirez*, the identification was not confined to the eyes, physical size, and clothing of Defendant. Instead, the State makes a point of the fact that the robber's entire, unobscured “face was about ten inches from” the man's when

the robber first crouched down next to the car. Thus “racial factors” are more significant here than they were in *Ramirez*. Cf. *id.* at 776, 784 (noting that “racial factors may have been of relatively little importance” when eyewitness identification was based on the defendant’s eyes, physical size, and clothing, and the eyewitness did not have the opportunity to view the defendant’s entire face).

¶ 14 This case also presents additional indications of unreliability. For instance, the man failed to identify Defendant at the lineup, which is an important consideration under the fourth *Ramirez* factor. See *id.* at 783. Moreover, the man’s original description of the robber omitted any mention of facial hair and included a definite recollection of long, straight hair. In contrast, Defendant had a goatee and a shaved head, both of which are features that seem hard to miss at a distance of ten inches, and the man did not miss the shaved head because it was covered with a beanie—he “definitely” remembered hair protruding well below the beanie.

[8] ¶ 15 If *Ramirez* was an extremely close call, we are confident that here we can “say that [the man]’s testimony is legally insufficient when considered in light of the other circumstances to warrant a preliminary finding of reliability and, therefore, admissibility.” See *id.* at 784. But our inquiry does not end there. We must also consider whether Defendant suffered prejudice as a result of the trial court admitting the identifications.

[9] ¶ 16 We agree with Defendant that the State bears the burden of convincing us that the improperly admitted eyewitness identifications were harmless beyond a reasonable doubt. See *Chapman v. California*, 386 U.S. 18, 24, 87 S.Ct. 824, 17 L.Ed.2d 705 (1967) (“[B]efore a federal constitutional error can be held harmless, the court must be able to declare a belief that it was harmless *25 beyond a reasonable doubt.”).² The State has not met this burden.

[10] ¶ 17 For us to determine that the trial court’s error was harmless beyond a reasonable doubt, we must consider “the importance of the witness[’s] testimony in the prosecution’s case, whether the testimony was cumulative, the presence or absence of evidence corroborating or contradicting the testimony of the witness on material points, the extent of cross-examination otherwise permitted, and, of course, the overall strength of the prosecution’s case.” *State v. Villarreal*, 889 P.2d 419, 425–26 (Utah 1995) (citation and internal quotation marks omitted). When the man’s identifications of Defendant are removed, the State’s case is severely weakened.

¶ 18 Evidence supporting the State’s case includes the facts that Defendant was wearing a beanie and a jacket when found and that he is Hispanic, which jurors might conclude matched the man’s description of a “Spanish” robber. The State recognizes that its strongest piece of evidence, aside from the eyewitness identifications, albeit with their significant descriptive discrepancies, was Defendant’s comment to police about someone following him—a comment similar to the question posed by the robber to the man, “Why you following me?” But without the identifications, the jurors would likely have found very significant the man’s initial description of the robber—a description that lacked a goatee and included long black and white hair—and the evidence that a trained police dog following the suspect’s scent pulled officers toward portable classrooms at the elementary school, while other officers veered off from the K9 unit and later found Defendant curled up in an air conditioning unit.

¶ 19 When the eyewitness testimony is taken away, the State loses its strongest evidence against Defendant, and we cannot say that the trial court’s error in admitting the unreliable eyewitness identifications was harmless beyond a reasonable doubt. We accordingly vacate Defendant’s conviction and remand for a new trial.

PEARCE, Judge (dissenting):

¶ 20 I dissent.

¶ 21 I agree with the majority that the time may have arrived for the Utah Supreme Court to revisit its holding in *State v. Ramirez*, 817 P.2d 774 (Utah 1991). But so long as *Ramirez* remains good law, we are duty-bound to apply it. I cannot squint at *Ramirez*’s holding in a way that permits me to see how the identification testimony offered in this case is less reliable than the testimony the *Ramirez* court deemed admissible. *Ramirez* identified five factors a court must consider in assessing the reliability of eyewitness testimony. In almost all respects, the showup involving Defendant in this case was substantially less troublesome than that the *Ramirez* court approved.

¶ 22 The first *Ramirez* factor centers on the “opportunity of the witness to view the actor during the event.” *Id.* at 782. This includes consideration of how long the witness saw the actor, the distance between them, the lighting, whether the witness could view the actor’s face, and whether there were distracting

¶ 23 In *Ramirez*, the witness (Wilson) testified at various times that he had seen the actor for either a second, a few seconds, or a minute or longer. Wilson also testified that the actor was about ten feet away from him; other witnesses described the distance as being as much as thirty feet away. Wilson testified that the actor was crouched at the end of a building and was wearing a mask over the lower part of his face. Wilson conceded that he could not see the actor's eyes clearly, but he "could see enough to know" they were "small." *Id.* Testimony varied as *26 to whether the lighting was good or whether shadows shrouded the actor. *Id.* at 782–83.

¶ 25 The second *Ramirez* factor examines the witness's degree of attention to the actor. *Id.* at 783. In *Ramirez*, Wilson was accosted by two men: Ramirez, who wielded a firearm, and a second man carrying a pipe. Wilson was struck with the pipe before he was even aware of Ramirez. While Wilson became aware of Ramirez's presence, the "pipe man" continued to threaten and swing the pipe at Wilson. In contrast, here, the witness was alone with Defendant. After observing Defendant for several seconds, the witness thought that the way Defendant moved his hand was suggestive of having a weapon. The witness began to get out of the car and negotiate his way around Defendant to escape the situation. Although concern over the potential possession of a weapon by Defendant may have distracted the witness, it remains a far cry from the distractions Wilson faced.

¶ 26 The third *Ramirez* factor looks at the witness's capacity to observe the event, including “whether the witness's capacity to observe was impaired by stress or fright at the time of the observation, by personal motivations, biases, or prejudices, by uncorrected visual defects, or by fatigue, injury, drugs or alcohol.” *State v. Ramirez*, 817 P.2d 774, 783 (Utah 1991). The *Ramirez* court considered that Wilson had been struck by

¶ 27 The fourth *Ramirez* factor considers whether the witness's identification was made spontaneously and remained consistent. *Id.* It also examines whether the identification was the “product of suggestion.” *Id.* *Ramirez* instructs that trial courts should consider a variety of factors, including the amount of time between observation and identification, the witness's mental capacity and state of mind at the time of the identification, the witness's exposure to information from other sources, instances when the witness failed to identify the defendant, instances when the witness gave inconsistencies in the description of the defendant, and the circumstances under which the defendant was presented to the witness for identification. *See id.*

¶ 28 In *Ramirez*, the showup occurred less than an hour after the event and the court concluded that nothing in the record suggested that Wilson's mental capacity or state of mind influenced the identification. Wilson was aware that one of the other witnesses had not identified Ramirez as the gunman but was otherwise not exposed to other identifications or opinions. The supreme court noted that Wilson's descriptions had varied in some details, such as whether Ramirez had worn a hat or sported tattoos. *Id.* at 784.

¶ 29 In this matter, the showup took place thirty-five minutes after the robbery. There is no indication in the record that the witness had been influenced by additional information. However, as the majority ably describes, there exist a number of concerns with the consistency of the witness's descriptions of Defendant. Notably, at a subsequent lineup, the witness identified both Defendant and another man as persons who might have stolen his car. Moreover, the witness originally omitted any mention of Defendant's facial hair and said that the robber had long, straight hair. Defendant had a *27 goatee and was bald. The discrepancies in the witness's identification present the only way in which this matter could be considered a better candidate for reversal than *Ramirez*. However, in light of the myriad other ways in which the

testimony in *Ramirez* appears more unreliable than that at issue here, I cannot conclude that these discrepancies are enough to pull this case from *Ramirez*'s reach.

¶ 30 *Ramirez* also examined whether Wilson's identification of Ramirez was the product of suggestion by looking at the procedures the showup employed. The identification occurred at night. *Id.* Prior to the showup, police officers remarked to Wilson that they had apprehended someone who fit the description of one of the robbers. Ramirez, the only person involved in the showup who was not a police officer, was handcuffed to a chain-link fence illuminated by the headlamps of police cars. Wilson identified Ramirez from the back seat of a police vehicle. Here, Defendant was similarly cuffed and lit by headlights. Defendant was also the only person at the showup who was not a law enforcement officer.

¶ 31 I concur with the majority when it echoes the *Ramirez* court's conclusion that "[t]he blatant suggestiveness of the

showup is troublesome." 817 P.2d 774, 784 (Utah 1991). However, even after acknowledging the troublesome nature of the showup, as well as Wilson's inability to see Ramirez's face (in part because Ramirez was wearing a mask), Wilson's changing testimony about whether Ramirez wore a hat, and the distraction caused by another assailant wielding a pipe, the *Ramirez* court found that Wilson's identification testimony was sufficiently reliable to be admissible. *Id.* at 782–84. Although it is far from the most satisfying result, if the testimony Wilson offered in *Ramirez* cleared the bar, so too must the testimony the witness offered in this matter.

¶ 32 For these reasons, I dissent.

All Citations

357 P.3d 20, 792 Utah Adv. Rep. 40, 2015 UT App 199

Footnotes

- 1 We decide this case within the framework established by *State v. Ramirez*, 817 P.2d 774 (Utah 1991). We have every reason to believe, however, that *Ramirez* must be revisited. See Anne E. Whitehead, Note, *State v. Ramirez: Strengthening Utah's Standard for Admitting Eyewitness Identification Evidence*, 1992 Utah L. Rev. 647, 689 (1992) (generally approving of *Ramirez* but recognizing that it "is not without flaws" because "the court's conclusion seems incongruous with the results of its application of the reliability analysis, leaving uncertain the future impact of the new Utah analytical framework"). Aside from any flaws inherent in the *Ramirez* analysis, scientific and legal research regarding the reliability of eyewitness identifications has progressed significantly in the last twenty-four years. See generally National Research Council of the National Academies, *Identifying the Culprit: Assessing Eyewitness Identification* 11–12 (2014). Before *Ramirez*, the Utah Supreme Court first took an in-depth look at the potential shortcomings of eyewitness identifications in *State v. Long*, 721 P.2d 483 (Utah 1986). In *Long*, the Court accepted the invitation to "either abandon any pretext of requiring a cautionary eyewitness instruction or make the requirement meaningful" by deciding "to follow the latter course." *Id.* at 487. The Court did this by "abandon [ing its] discretionary approach to cautionary jury instructions and direct [ing] that in cases tried from th[at] date forward, trial courts shall give such an instruction whenever eyewitness identification is a central issue in a case and such an instruction is requested by the defense." *Id.* at 492. Then, after *Ramirez*, the Court considered another aspect of cases involving eyewitness identifications—expert testimony. In *State v. Butterfield*, 2001 UT 59, 27 P.3d 1133, the Court affirmed a trial court's exclusion of an expert witness because the trial court had found that the proposed expert testimony "did not deal with the specific facts from [that] case but rather would constitute a lecture to the jury about how it should judge the evidence." *Id.* ¶ 44 (internal quotation marks omitted). The issue was revisited in *State v. Hubbard*, 2002 UT 45, ¶ 14, 48 P.3d 953. In *Hubbard*, while leaving *Butterfield* untouched, the Court did invite trial courts "to specifically tailor instructions other than those offered in *Long* that address the deficiencies inherent in eyewitness identification." *Id.* ¶ 20. But in *State v. Clopten*, 2009 UT 84, 223 P.3d 1103, the Court recognized that its "previous holdings ha[d] created a de facto presumption against the admission of eyewitness expert testimony, despite persuasive research that such testimony is the most effective way to educate juries about the possibility of mistaken identification." *Id.* ¶ 30. The Court sought to change this by announcing "that the testimony of a qualified expert regarding factors that have been shown to contribute to inaccurate eyewitness identifications should be admitted whenever it meets the requirements of rule 702 of the Utah Rules of Evidence." *Id.* The Court "expect[ed] this application of rule 702 [to] result in the liberal and routine admission of eyewitness expert testimony." *Id.*

While Utah jurisprudence now better recognizes the problematic nature of eyewitness identification, *Ramirez* remains the standard by which courts must evaluate the admissibility of this evidence. It is a standard that does not accurately reflect the changed views about handling this problematic evidence. And the disconnect between the legal analysis in *Ramirez* and its outcome makes it an unreliable tool for resolving particular cases, as shown by the two opinions in this case. All of this, taken together, indicates that it is time for our Supreme Court to reconsider *Ramirez*, a proposition with which the dissent agrees. See *infra* ¶¶ 21.

- 2 We recognize that *State v. Ramirez*, 817 P.2d 774 (Utah 1991), was primarily concerned with an alleged due process violation under the Utah Constitution. *Id.* at 781. See Utah Const. art. I, § 7. Utah's approach "is certainly as stringent as, if not more stringent than, the federal analysis," but there is no reason to assume our constitution would impose a different standard of review for those few circumstances where our constitution is violated but the federal constitution is not. *Ramirez*, 817 P.2d at 784. See U.S. Const. amend. XIV, § 1.


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Addendum B

U.C.A. 1953, Const. Art. 1, § 12

West's Utah Code Annotated
Constitution of Utah

* Article I. Declaration of Rights

Sec. 12. [Rights of accused persons]

In criminal prosecutions the accused shall have the right to appear and defend in person and by counsel, to demand the nature and cause of the accusation against him, to have a copy thereof, to testify in his own behalf, to be confronted by the witnesses against him, to have compulsory process to compel the attendance of witnesses in his own behalf, to have a speedy public trial by an impartial jury of the county or district in which the offense is alleged to have been committed, and the right to appeal in all cases. In no instance shall any accused person, before final judgment, be compelled to advance money or fees to secure the rights herein guaranteed. The accused shall not be compelled to give evidence against himself; a wife shall not be compelled to testify against her husband, nor a husband against his wife, nor shall any person be twice put in jeopardy for the same offense.

Where the defendant is otherwise entitled to a preliminary examination, the function of that examination is limited to determining whether probable cause exists unless otherwise provided by statute. Nothing in this constitution shall preclude the use of reliable hearsay evidence as defined by statute or rule in whole or in part at any preliminary examination to determine probable cause or at any pretrial proceeding with respect to release of the defendant if appropriate discovery is allowed as defined by statute or rule.

CREDIT(S)

Laws 1994, S.J.R. 6, § 1, adopted at election Nov. 8, 1994, eff. Jan. 1, 1995.

Addendum C



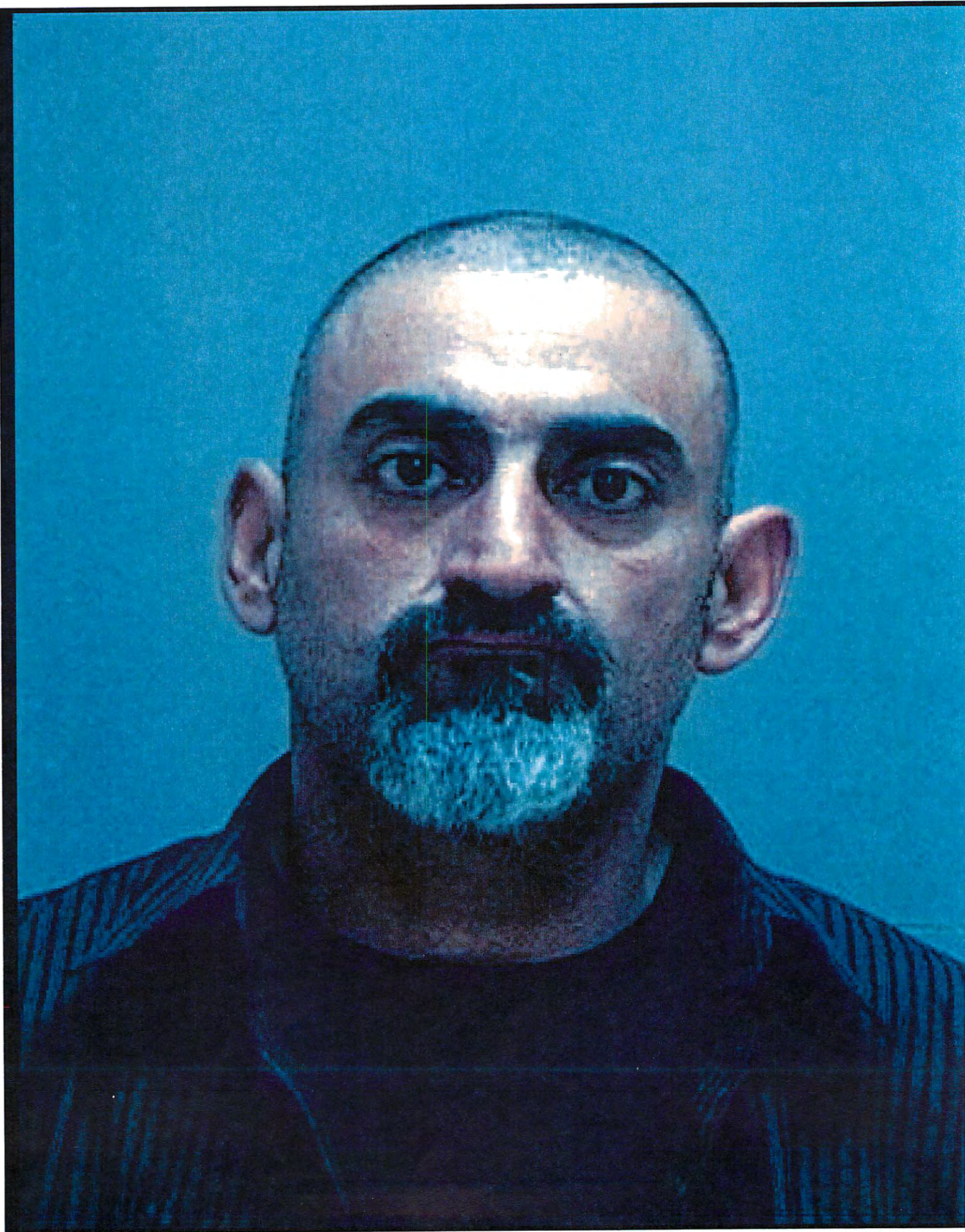


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DEFENDANT'S
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Addendum D

Eyewitness Evidence

Improving Its Probative Value

Gary L. Wells,¹ Amina Memon,² and Steven D. Penrod³

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SUMMARY—The criminal justice system relies heavily on eyewitnesses to determine the facts surrounding criminal events. Eyewitnesses may identify culprits, recall conversations, or remember other details. An eyewitness who has no motive to lie is a powerful form of evidence for jurors, especially if the eyewitness appears to be highly confident about his or her recollection. In the absence of definitive proof to the contrary, the eyewitness's account is generally accepted by police, prosecutors, judges, and juries.

However, the faith the legal system places in eyewitnesses has been shaken recently by the advent of forensic DNA testing. Given the right set of circumstances, forensic DNA testing can prove that a person who was convicted of a crime is, in fact, innocent. Analyses of DNA exoneration cases since 1992 reveal that mistaken eyewitness identification was involved in the vast majority of these convictions, accounting for more convictions of innocent people than all other factors combined. We review the latest figures on these DNA exonerations and explain why these cases can only be a small fraction of the mistaken identifications that are occurring.

Decades before the advent of forensic DNA testing, psychologists were questioning the validity of eyewitness reports. Hugo Münsterberg's writings in the early part of the 20th century made a strong case for the involvement of psychological science in helping the legal system understand the vagaries of eyewitness testimony. But it was not until the mid- to late 1970s that psychologists began to conduct programmatic experiments aimed at understanding the extent of error and the variables that govern error when eyewitnesses give accounts of crimes they have witnessed. Many of the experiments conducted in the late 1970s and throughout the 1980s resulted in articles by psychologists that contained strong warnings to the legal system that eyewitness evidence was being overvalued by the justice system in the sense that its impact on triers of fact (e.g., juries) exceeded its probative (legal-proof) value. Another message of the research was that the

validity of eyewitness reports depends a great deal on the procedures that are used to obtain those reports and that the legal system was not using the best procedures.

Although defense attorneys seized on this nascent research as a tool for the defense, it was largely ignored or ridiculed by prosecutors, judges, and police until the mid 1990s, when forensic DNA testing began to uncover cases of convictions of innocent persons on the basis of mistaken eyewitness accounts. Recently, a number of jurisdictions in the United States have implemented procedural reforms based on psychological research, but psychological science has yet to have its fullest possible influence on how the justice system collects and interprets eyewitness evidence.

The psychological processes leading to eyewitness error represent a confluence of memory and social-influence variables that interact in complex ways. These processes lend themselves to study using experimental methods. Psychological science is in a strong position to help the criminal justice system understand eyewitness accounts of criminal events and improve their accuracy. A subset of the variables that affect eyewitness accuracy fall into what researchers call system variables, which are variables that the criminal justice system has control over, such as how eyewitnesses are instructed before they view a lineup and methods of interviewing eyewitnesses. We review a number of system variables and describe how psychological scientists have translated them into procedures that can improve the probative value of eyewitness accounts. We also review estimator variables, variables that affect eyewitness accuracy but over which the system has no control, such as cross-race versus within-race identifications.

We describe some concerns regarding external validity and generalization that naturally arise when moving from the laboratory to the real world. These include issues of base rates, multicollinearity, selection effects, subject populations, and psychological realism. For each of these concerns, we briefly note ways in which both theory and field data help make the case for generalization.

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INTRODUCTION

Kirk Bloodsworth had never been in trouble with the law, and yet he was convicted in March 1985 for the 1984 sexual assault and slaying of a 9-year-old girl in Maryland (*State of Maryland v. Kirk N. Bloodsworth*, 1984). Five eyewitnesses identified Bloodsworth at trial. Later that month, a judge sentenced him to death. He spent 2 years on death row before he received a new trial based on the prosecution's withholding of information about other suspects. This time he received a life sentence. Bloodsworth maintained a claim of innocence from the outset, but it was not until 1993 that he was released from prison on the basis of DNA testing that proved he was not the source of semen found in the little girl's underwear. Bloodsworth was lucky that the underwear had been preserved, because earlier (pre-DNA) tests had indicated nothing of value on the underwear. But what kind of luck is being convicted of a murder you did not commit? His mother died while he was in prison, before learning the truth that he was innocent. And despite his release from prison, some people, including one of the original prosecutors, continued to believe that Bloodsworth may have been the murderer. The eyewitness evidence just seemed too strong. Maybe Bloodsworth really was the murderer, they reasoned, and the tiny speck of semen came from someone other than the murderer—perhaps someone who had access to the little girl's dresser drawer, for instance. Bloodsworth went on with his life, confident in his own innocence but having to live with the occasional doubt raised by those who somehow remained unpersuaded. Then, in September 2003, DNA testing got a hit on the actual murderer, Kimberly Shay Ruffner. Nineteen years after Kirk Bloodsworth was sentenced to death, the proof was finally there: He had had nothing to do with the sexual assault and slaying of the young girl.

The case of Kirk Bloodsworth illustrates several problems with eyewitness evidence. First, it illustrates the fallacy of assuming that inter-witness agreement is necessarily strong evidence of accuracy. Many factors can lead to inter-witness agreement, such as interaction among the witnesses in which they share information. In general, factors that lead one eyewitness to make a particular error will lead others to make the same error. Second, the Bloodsworth case illustrates the profound level of proof required for exonerating evidence to trump eyewitness identification evidence. Even when the semen was proved not to match Bloodsworth's DNA, many people were unwilling to believe he was innocent. It was necessary to prove that someone else had committed the murder. Third, the Bloodsworth case illustrates that mistaken identification is a dual problem: Not only might an innocent person be convicted but the guilty party remains free to reoffend.

The role of scientific psychology in the problem of eyewitness evidence is a profound one. With few exceptions, the legal system has not conducted research on eyewitness evidence, has never conducted an experiment on memory, and has no scientific theory regarding how memory works. The scientific study of

eyewitnesses is purely the domain of psychology. When the U.S. Department of Justice finally wrote guidelines on eyewitness evidence in 1999, the only scientific studies cited were those published by psychologists in psychology journals. Today, psychology is engaged in an active dialogue with judges, police, and prosecutors on ways to improve the probative (evidentiary) value of eyewitness reports. The credibility of scientific psychology has risen immensely in the legal system recently, largely because psychologists were already "blowing the whistle" on eyewitness evidence well before forensic DNA testing began uncovering mistaken identifications in the 1990s. In effect, psychologists were able to use experiments to identify eyewitness problems long before the legal system was smacked in the face with DNA exonerations.

A primary purpose of this article is to describe empirical evidence supporting the proposition that some of the problems with eyewitness evidence can be addressed by improving the way the evidence is collected and preserved. We discuss how eyewitnesses are interviewed, how lineups are conducted, and why procedures can have a strong impact on the resulting probative value of eyewitness testimony. These variables are called system variables, because they are under the control of the justice system (Wells, 1978). The importance of system variables that can reduce eyewitness error has become increasingly apparent in light of the proven inadequacies of traditional safeguards against eyewitness mistakes, such as the presence of counsel at lineups and the opportunity to present motions to suppress suggestive procedures (Stinson, Devenport, Cutler, & Kravitz, 1996, 1997). But even if the system reaches a point at which it makes perfect use of system variables, eyewitness errors attributable to other factors will remain. Thus, it is important to review these other (non-system-controlled) factors as well.

This monograph is not intended as an exhaustive review of the eyewitness literature. Instead, we focus on practices, procedures, and research that address the most common threats to eyewitness reliability. Although the bulk of the scientific and legal literature we cite has a North American origin, the international research community has made extremely important contributions. In fact, historically, it was Europeans who played the much greater role in the study of eyewitness memory.¹

We begin with a brief history of psychology's attempt to help the legal system on the eyewitness issue. Then we describe the DNA exoneration cases that began to unfold in the 1990s and the role these exonerations have played in giving scientific psychology a stronger voice in the legal system's policies and procedures involving eyewitness evidence. We then give an overview of the standard methods used in eyewitness research, followed by selected findings on estimator and system variables.

¹We are fortunate to have Siegfried Sporer, a strong European contributor to the empirical literature on eyewitness issues, write the editorial preceding this monograph (see p. i). Sporer places our report in a broader historical and international context.

A BRIEF HISTORY OF EYEWITNESS PSYCHOLOGY

In his book *La Suggestibilité*, Alfred Binet (1900) argued for the creation of a practical science of testimony based on his observations about the effects of suggestion. Binet was the first to report that suggestive questioning influenced responses. But it was German psychologists who were among the first to argue that how eyewitnesses were questioned makes a great deal of difference. Louis William Stern was publishing and editing studies of eyewitness testimony as early as 1904 (Stern, 1904). In the United States, Guy Montrose Whipple published a number of articles in *Psychological Bulletin* on eyewitness testimony (Whipple, 1909, 1910, 1911, 1912). But it was Hugo Münsterberg's (1908) book *On the Witness Stand* and his injection of himself into the legal system that had a more lasting impact in the United States.

Münsterberg was recruited by William James in 1892 to come to Harvard to run the university's psychological laboratory. Münsterberg was very much a public figure and he appeared frequently in the popular press. He also was a somewhat controversial figure at Harvard, presumably because his colleagues did not see a great deal of merit in applying psychology. His lectures and writings were extremely perceptive and well reasoned, albeit rather short on data by modern standards. His prescience is evident in such matters as his claim that eyewitness certainty has a tenuous relation to accuracy and that while jurors might understand forgetting, they are not likely to understand that a witness can remember the wrong thing.

Although Münsterberg maintained a certain prominence in psychology, his impact on the legal system was muted dramatically by the skilled counterargumentation of one of the greatest minds in American jurisprudence, John Henry Wigmore. Particularly problematic for Münsterberg was a law review article by Wigmore (1909) that challenged Münsterberg's (1908) overstatements about the ability of psychology to help the legal system. Wigmore was especially effective in arguing that psychology did not yet have ready tools for handling the problem of evaluating eyewitness accounts, as Münsterberg had claimed. For the most part, Wigmore won the argument, at least from the perspective of the legal system.

Eyewitness research fell to a trickle in the period of the 1920s to 1960s. Some important work was done in the 1930s by Burt (1931) and Stern (1939). The 1940s produced some important studies by Snee and Lush (1941) on question effects and by Allport and Postman (1947) on person-to-person information transfer. And although Hastorf and Cantrill (1954) demonstrated the effects of personal prejudice on perception in the 1950s, there was little discussion of the relevance of this to the legal system and to eyewitnesses in general. There are differing accounts of why these decades were largely devoid of eyewitness psychology. Sporer (1982) argues that it was the result of zealous overgeneralizations by psychologists that failed to meet the needs and standards of the courtroom.

The Modern Era of Eyewitness Research

More than any other individual's work, it was Elizabeth Loftus's elegant experiments on postevent information that gave rise to the modern era of eyewitness research. Loftus managed to show that realistic stimuli, such as pictures of stop signs and red barns in their natural settings, could be used in rigorous scientific experiments that revealed basic phenomena in memory and also had practical utility for understanding eyewitness error. By publishing her work in prestigious scientific psychology journals in the mid- and late 1970s—journals such as *Cognitive Psychology*, *Journal of Verbal Learning and Verbal Behavior*, and *Journal of Experimental Psychology: Human Learning and Memory*—Loftus legitimized the study of eyewitnesses in the minds of psychological scientists. Her book *Eyewitness Testimony* (Loftus, 1979) remains one of the best known psychology books almost three decades after it was released. Like Münsterberg, Loftus was criticized for some of her claims (e.g., McCloskey & Egeth, 1983), but, unlike Münsterberg, she helped spawn a new generation of researchers who have carefully and strategically built an empirical literature that the legal system must contend with.

While Loftus was focusing on memory for events and the malleability of memory, Robert Buckhout at Brooklyn College was focusing on memory for people. Buckhout was more concerned with mistaken identification from lineups than with memory for objects. Although Buckhout wrote a highly visible article in *Scientific American* reviewing research on eyewitness reliability (Buckhout, 1974), he was not otherwise particularly successful in getting his work published in scientific psychology journals. He did, however, create his own "in house" outlet called *Social Action and the Law*. Buckhout often used dramatic means to get his point across. For example, he got a New York City television station to broadcast a staged mugging followed by a six-person lineup. Of the 2,145 viewers who called in, nearly 2,000 mistakenly identified the mugger in the lineup (Buckhout, 1980). It is possible that Buckhout could have published some of his experiments in better journals but chose not to spend the time and effort required to go through the rigorous review process. Still, Buckhout influenced many younger researchers, who took up the issue of mistaken identification. At about the same time, eyewitness research activity was growing in the United Kingdom, prompted by the investigation of the Devlin Committee (Devlin, 1976; see also Bull & Clifford, 1976; Clifford & Bull, 1978; Davies, Ellis, & Shepherd, 1978; Ellis, Davies, & Shepherd, 1977).

One of the organizing themes that emerged from the 1970s was the distinction between system variables and estimator variables (Wells 1978). The argument was that some of the variables that affect the accuracy of eyewitness reports were under the control (or potentially under the control) of the justice system (system variables) while others were not (estimator variables). For example, how eyewitnesses are interviewed by police and how eyewitnesses are instructed prior to viewing a

lineup are system variables, because they can be controlled by the system that is collecting the eyewitness evidence. Other variables—such as cross-race versus within-race identifications or stress experienced by the witness during the event—cannot be controlled by the system. Both system and estimator variables can be controlled and manipulated in experiments, but only system variables can be controlled in actual cases. Variables that cannot be controlled by the justice system (even though they can be controlled in experiments) are called estimator variables because the best that eyewitness psychology can do is help estimate their impact in a given case.

The singling out of system variables was important, because it addressed the primary argument that Wigmore used in his devastating criticism of Münsterberg—namely, that psychology had no practical recommendations for dealing with the eyewitness problem. Loftus's main findings fit nicely into the system-variable framework. For instance, if certain types of questions (leading questions) result in eyewitnesses incorporating information into their later reports regarding matters they did not witness, then psychology could devise practical ways to avoid this problem. Likewise, if certain instructions to eyewitnesses prior to viewing a lineup reduce the chances of mistaken identification, then psychology could advise on the best ways to instruct eyewitnesses.

Throughout the 1970s and 1980s, eyewitness research was largely ignored by the criminal justice system. The big exception was criminal defense lawyers. Defense lawyers were quick to recognize the potential for psychology to help them convince juries that eyewitness memory was not to be trusted, and they saw expert testimony as the mechanism to do this. The battle to permit expert testimony on eyewitness issues, however, was and is a contentious one. Expert testimony has been both permitted and denied in nearly every state in the United States, depending on the discretion of the trial judge. Prosecutors generally use four arguments against the admission of expert testimony on eyewitness issues. One argument is that the eyewitness literature is not sufficiently mature or precise to be considered scientific. Today, this argument almost never prevails. However, the three other arguments continue to prevent expert testimony on eyewitness issues in many jurisdictions. One is that such testimony invades the province of the jury, because it is the jury that must decide the credibility of witnesses. Another argument is that the findings are merely a matter of common sense and that juries already know these things from their everyday experience. Yet another argument is that the prejudicial value of expert testimony regarding eyewitnesses outweighs its probative value. This argument assumes that eyewitness experts can make juries more dubious of the eyewitness than they ought to be. It is not the purpose of the current monograph to argue the merits of expert testimony. We simply note that expert testimony for the defense was, until recently, virtually the only way the legal system acknowledged the scientific study of eyewitnesses.

Forensic DNA Testing: An Awakening of the Legal System Much has changed in the past few years, but not because of any change in how eyewitness scientists have approached their work. Rather, the advent of forensic DNA testing has changed the way the legal system views eyewitness evidence. Previous studies of the conviction of innocent people had shown that mistaken eyewitness identification was implicated in the majority of wrongful conviction cases (e.g., Borchard, 1932; Frank & Frank, 1957; Huff, Rattner, & Sagarin, 1986). But it was the development of forensic DNA testing in the 1990s that permitted definitive cases of the conviction of innocent people in the United States to be uncovered. Defense lawyers Barry Scheck and Peter Neufeld, cofounders of the Innocence Project in New York City, took the lead and are still the central figures in facilitating the use of forensic DNA to test claims of innocence by people who were convicted by juries. Scheck and Neufeld were quick to see the pattern: Eyewitness-identification error was at the heart of the evidence used to convict the vast majority of these innocent people. Press accounts of these exonerations caught the attention of U.S. Attorney General Janet Reno, and an early report commissioned by Reno revealed that 26 of the first 28 exonerations were cases of mistaken eyewitness identification (Connors, Lundregan, Miller, & McEwan, 1996). Follow-ups revealed that 36 of the first 40 DNA exonerations were mistaken-identification cases (Wells, Small, Penrod, Malpass, Fulero, & Brimacombe, 1998). Scheck, Neufeld, and Dwyer (2000) reported that 52 of the first 62 DNA exonerations were mistaken-identification cases. As of this writing, there have been more than 180 definitive DNA exonerations; the proportion that involves mistaken eyewitness identification continues to run about 75% or more. The Innocence Project in New York maintains an up-to-date Web site, www.innocenceproject.org, that catalogues these DNA exonerations, and there are now innocence projects worldwide (http://forejustice.org/wc/wrongful_conviction_websites.htm).

Before the DNA exoneration cases, some people believed that the results of eyewitness experiments in psychology were mere academic exercises, games played with people's memories that would not apply to real witnesses and real crimes. At the very least, the DNA exonerations have proved that eyewitnesses can be absolutely positive and yet absolutely mistaken, just as was found in the experiments. But do 180-plus cases of mistaken identification prove anything? If these cases were the total, then it might be argued that this is a rather small fraction of convictions. But consider the following observations. Virtually all of these DNA exoneration cases involved sexual assault. Some also involved murder, robbery, and other offenses, but sexual assault is the common feature.

It is not that sexual assault witnesses are especially poor eyewitnesses. In fact, they might be the very best at identifying their attackers, because they tend to get longer, closer views of them than do victims of most other crimes. The reason these DNA exoneration cases are sexual assault cases is because they are the

cases for which biologically rich DNA traces were left behind by the perpetrator in the form of semen. (In 2004, nearly 95,000 sexual assaults were reported, with a 43% clearance rate. For crime statistics, see www.fbi.gov/ucr/cius_04/offenses_reported/violent_crime/index.html.) Stranger-rape cases, in which identification is most likely to be an issue, constitute less than a third of all reported sexual assaults. More than 70% of reported sexual assaults involve an intimate partner, relative, or acquaintance, so about 30,000 cases of stranger-rape come to the attention of the police each year. In contrast to sexual assault cases, only a small fraction of murders (more than 16,000 reported in 2004) and almost no robberies (more than 400,000 reported in 2004) or aggravated assaults (more than 850,000 reported in 2004) result in biologically rich trace evidence being left behind. What can the person who was convicted of a convenience store robbery or a drive-by shooting use to prove that the eyewitness identification was mistaken? Thus, these 180-plus DNA exonerations represent a small proportion of the crimes for which eyewitness identification evidence has been used to convict people. Furthermore, only a fraction of old sexual assault convictions can now be tested, because the evidence was never collected, was collected improperly, has deteriorated, has been lost, or has been destroyed. All in all, the 180 (and growing) DNA exonerations can only be a small fraction of the total number of cases in which people have been convicted because they were mistakenly identified by eyewitnesses.

We will not venture an estimate of the number of people in prison who are innocent victims of mistaken eyewitness identification. Instead, our focus is on what the legal system might be able to do to help prevent these mistakes from occurring in the future. This is where we have seen some promising progress recently. Janet Reno's appointment of a working group to develop guidelines for eyewitness evidence was a watershed event, because the group included five eyewitness researchers. Reno recognized that scientific psychology was well ahead of the legal system both in recognizing the eyewitness problem and in developing solutions for it. An account of this process, which yielded the first set of U.S. national guidelines on eyewitness evidence, has been published elsewhere (Wells, Malpass, Lindsay, Fisher, Turtle, & Fulero, 2000). Since the publication of the guide, a number of jurisdictions have formally adopted the recommendations and have gone well beyond the guide to include procedural changes recommended by eyewitness scientists. These jurisdictions include the states of New Jersey, North Carolina, and Wisconsin, as well as the cities of Boston and Minneapolis, among others (Wells, 2006).

Despite these encouraging reforms, it is estimated that only about 10% of the U.S. population reside in reformed jurisdictions (Wells, 2006). Will these system-variable improvements continue by increasing numbers of jurisdictions in the years to come? Only time will tell. In the following sections we review some of the evidence that has led to the changes, and we note how the eyewitness-research area must continue to

develop to ensure that the evolving relationship between the legal system and psychological science will be a fruitful and lasting one.

COMMON METHODS USED IN EYEWITNESS RESEARCH

The experimental method has dominated the eyewitness literature, and most of the experiments are lab based. Lab-based experimental methods for studying eyewitness issues have strengths and weaknesses. The primary strength of experimental methods is that they are proficient at establishing cause-effect relations. This is especially important for research on system variables, because one needs to know in fact whether a particular system manipulation is expected to cause better or worse performance. In the real world, many variables can operate at the same time and in interaction with one another. Multicollinearity can be quite a problem in archival/field research, because it can be very difficult to sort out which (correlated) variables are really responsible for observed effects. The control of variables that is possible in experimental research can bring clarity to causal relationships that are obscured in archival research. For example, experiments on stress during witnessing have shown, quite compellingly, that stress interferes with the ability of eyewitnesses to identify a central person in a stressful situation (Morgan et al., 2004; Deffenbacher, Bornstein, Penrod, & McCorty, 2004). However, when Yuille and Cutshall (1986) studied multiple witnesses to an actual shooting, they found that those who reported higher stress had better memories for details than did those who reported lower stress. Why the different results? In the experimental setting, stress was manipulated while other factors were held constant; in the actual shooting, those who were closer to the incident reported higher levels of stress (presumably because of their proximity) but also had a better view. Thus, in the actual case, stress and view covaried.

The experimental method is not well suited to postdiction with estimator variables—that is, there may be limits to generalizing from experiments to actual cases. One reason is that levels of estimator variables in experiments are fixed and not necessarily fully representative of the values observed in actual cases. In addition, it is not possible to include all interesting and plausible interactions among variables in any single experiment (or even in a modest number of experiments). Clearly, generalizations to actual cases are best undertaken on the basis of a substantial body of experimental research conducted across a wide variety of conditions and employing a wide variety of variables. Nevertheless, the literature is largely based on experiments due to a clear preference by eyewitness researchers to learn about cause and effect. Furthermore, “ground truth” (the actual facts of the witnessed event) is readily established in experiments, because the witnessed events are creations of the experimenters. That kind of ground truth is difficult, if not impossible, to establish when analyzing actual cases.

Experimental Methods

The ecological validity of witnessed events (when examined at the surface level) varies considerably across experiments. Some eyewitness experiments simply show slides to participant witnesses, while others stage live crimes. Some of the staged crimes have been elaborate ruses in which calls are made to "police" (actually confederates of the experimenter) and participants are shown lineups while still believing that what they witnessed was real (e.g., Luus & Wells, 1994; Wells & Murray, 1983). Perhaps the most common witnessed event used by researchers is the video crime. The immense time and cost involved in staging live crimes has undoubtedly made them less common in the literature in recent years, but the success of video crime experiments in the peer-review process suggests that researchers believe this method manages to capture the elements that are important for studying eyewitness processes. Usually, the memory-acquisition process is incidental in the sense that the participant witnesses do not know when they watch the video that the study concerns eyewitness memory. Instead, researchers commonly tell them that they are going to have to form impressions or make judgments about the people or scenes. Only later are they informed that the study concerns eyewitness memory.

In lineup experiments, the participant witnesses are usually tested with photo lineups rather than with live lineups. Again, the savings in cost and time are factors, but the use of photo lineups in experiments parallels their use in actual cases. In the United Kingdom, there has been a move toward the use of video lineups (Pike, Kemp, Towell, & Phillips, 1997; Valentine & Heaton, 1999). Although some jurisdictions (such as New York) still use live lineups, most jurisdictions in the United States use photo lineups. Even where live lineups are in common use, more often than not they are preceded by a photo lineup, and the live lineup is merely a confirmatory tool. Thus, the prevalence of photo lineups in experiments reflects what is happening in actual criminal investigations.

It is standard practice in experiments to use lineups in which the actual perpetrator is present in the lineup for some participant witnesses and not present for others. The not-present lineups (target-absent or perpetrator-absent lineups) are critically important for eyewitness-identification studies that are designed to examine accuracy. Target-absent lineups simulate the real-world situation in which police have focused their suspicion on an innocent suspect. The standard procedure in lineup experiments is to create a target-absent lineup by replacing the target with another person who fits the target's description and leaving the fillers (the innocent distracters or foils in the lineup) the same.

Participant witnesses in experiments typically take the perspective of a bystander rather than a victim. However, some experiments have examined possible differences between bystander eyewitnesses and victim eyewitnesses and have found no significant differences (Hosch & Cooper, 1982; Hosch, Leippe, Marchioni, & Cooper, 1984).

Participant witnesses in experiments are typically college students. The reliance on this population has been criticized, especially by prosecutors. However, many experiments have included other populations, such as young children, adults, and the elderly. Importantly, when differences are found, the results favor the college students. Specifically, college students are less suggestible and more accurate as eyewitnesses overall than are either children or the elderly (Cutler & Penrod, 1995; Searcy, Bartlett, & Memon, 1999). Presumably this is due to the higher education level, intelligence, memory ability, visual acuity, alertness, and general health of college students relative to the general population. Thus, if anything, heavy reliance on college student subject populations for eyewitness research may paint an unrealistically rosy picture of eyewitness abilities.

Within the basic eyewitness-experiment paradigm, manipulations are embedded and their effects are observed. For example, an experiment focusing on system variables might have everyone view the same simulated crime and then randomly assign some participant witnesses to receive a postevent suggestion or randomly assign some to receive a particular prelineup instruction. In an experiment focusing on estimator variables, participants might be randomly assigned to view a crime in which the perpetrator is of a different race or the same race or to make an identification after a short delay or after a long delay.

Archival Methods

Although the experimental method is preferred, archival studies of eyewitnesses have become more common in recent years. A major drawback to archival studies is the inability to establish cause and effect and the questionable basis for assuming ground truth. Studies of the DNA exoneration cases involve ground truth for identity of the perpetrator, but these are only case studies, not archival analyses. Archival analyses have proven to be particularly informative with regard to lineups. A lineup that is properly constructed includes only one suspect (who might or might not be the perpetrator); the other people in the lineup are innocent fillers who would not be charged with the crime if they were identified by the eyewitness. Thus, when an eyewitness selects a filler in an actual lineup, it is immediately classifiable as an error. It is not the type of error that could send an innocent person to jail (only identifications of an innocent *suspect* could do that), but it is an identification error nevertheless.

Archival analyses of filler identifications have yielded very interesting results. Wright and McDaid (1996) analyzed 1,561 lineup outcomes in London and found filler-identification rates of 19.9%. These data are similar to the 21% filler identification rate reported by Slater (1994) in a study of 843 lineups conducted by the Metropolitan Police in London. Behrman and Davey (2001) reported that 24% of identifications from live lineups in Sacramento, California, were identifications of fillers. Valentine, Pickering, and Darling (2003) analyzed 119 lineups in the greater London area and found that 21.6% of the

eyewitnesses identified fillers. In these four studies of actual eyewitnesses to serious crimes, filler identifications constituted approximately one third of all positive identifications. These archival results represent a very important complement to the experimental studies of eyewitnesses for several reasons. First, they indicate filler-identification results that are quite consistent with rates obtained in experiments (Ebbeson & Flowe, n.d.; Steblay, Dysart, Fulero, & Lindsay, 2001). Second, these archival results address a common criticism of experiments—namely, that participant witnesses in experiments are not as cautious as actual crime witnesses are, because the consequences of a mistaken identification in an experiment are not serious. But the witnesses in the archival studies were actual witnesses to crimes and yet mistakenly identified fillers in one third of their positive identifications. Third, the filler-identification rates in the archival studies permit us to make conservative estimates of the risk that an innocent suspect would face in these lineups. For example, with five fillers in each lineup (six-person lineup minus the suspect) and a 20% filler-identification rate, the risk to any given filler is 4%. If an innocent suspect has the same risk as a filler, the estimated risk to an innocent suspect is 4%.

These estimates of the risk to an innocent suspect are conservative for two reasons. First, lineups rarely yield equal distributions of error because the innocent suspect will commonly stand out for any number of reasons, including the selection of fillers that bear a poor resemblance to the description of the perpetrator given by the witness (Valentine & Heaton, 1999; Brigham, Meissner, & Wasserman, 1999). Second, when the actual perpetrator is not in the lineup (i.e., the suspect is innocent), the rates of filler identification increase (see Wells & Olson, 2002). Assuming that the perpetrator was present in a large proportion of the lineups in these archival studies, the filler-identification rates underestimate the expected error rate for any given lineup in which the perpetrator is absent.

Archival studies also permit analyses that examine results as a function of different levels of critical variables. For example, Wright and McDaid (1996) found that the filler-identification rate was 20.8% for violent crimes and 17.6% for nonviolent crimes. Valentine et al. (2003) found that the filler-identification rate was 15.9% when a weapon was present and 23.7% when there was no weapon. The latter result seems peculiar in light of the experimental results indicating a deleterious effect for the presence of a weapon (see meta-analysis by Steblay, 1992)—but in the weapons-effect section later in this monograph, we note that archival data are subject to “selection effects” that may offset or reinforce the effects of variables such as weapon focus.

Another interesting archival finding does not concern eyewitnesses per se but has a powerful bearing on expected rates of mistaken identification in the courtroom: Archival studies indicate that those charged with a crime enter a guilty plea in 80 to 90% of cases (Cole, 1986). Let us assume that 80% plead guilty

(the argument is stronger at 90%). We might assume that no mistakenly identified (innocent) suspects plead guilty and that all the guilty pleas are from guilty suspects. (In no sense do we intend for this assumption to be interpreted as a denial of the important work of Kassin & Gudjonsson, 2004, and other false-confession researchers, who have clearly made a compelling case that innocent people plead guilty.) Even if we presume that 10% of mistakenly identified suspects plead guilty, 90% of the innocent suspects and only 20% of the guilty suspects will go to trial. Assume further that a mere 4% of suspects identified from a lineup are innocent and 96% are guilty. If we assume that 80% of guilty suspects plead guilty and therefore do not go to trial, only 20% of the 96% (19.2% of the guilty) will go to trial, whereas 90% of the 4% (3.6% of the innocent suspects) will go to trial. Thus, at the trial level, 16% of the defendants (3.6% of the 22.8% going to trial) will be cases of mistaken identification. Charman and Wells (2006) called this the “pleading effect”; it illustrates how the mistaken-identification rate can be expected to be higher at the trial level than at the lineup level (see Fig. 1).

ESTIMATOR VARIABLES

We first review estimator variables. Although these variables are not under the control of the justice system, they are important to our treatment for two main reasons. First, estimator variables are central to our understanding of when and why eyewitnesses are most likely to make errors. Informing police, prosecutors, judges, and juries about the conditions that can affect the accuracy of an eyewitness account is important. Second, our understanding of the importance of any given system variable is, at least at the extreme, dependent on levels of the estimator variables. Consider a case in which a victim eyewitness is abducted and held for 48 hours by an unmasked perpetrator; the witness has repeated viewings of the perpetrator, lighting is good, and so on. We have every reason to believe that this witness has a deep and lasting memory of the perpetrator's face. Then, within hours of being released, the eyewitness views a lineup. Under these conditions, we would not expect system variables to have much impact. For instance, a lineup that is biased against an innocent suspect is not likely to lead this eyewitness to choose the innocent person, because her memory is too strong to be influenced by lineup bias. On the other hand, when an eyewitness's memory is weaker, system variables have a stronger impact.

The effects on identification accuracy of a large number of estimator variables—witness, crime, and perpetrator characteristics—have been investigated by psychologists. Here we recount findings concerning several variables that have received significant research attention and achieved high levels of consensus among experts (based on items represented in a survey by Kassin, Tubb, Hosch, & Memon, 2001) or have been the subject of interesting recent research.

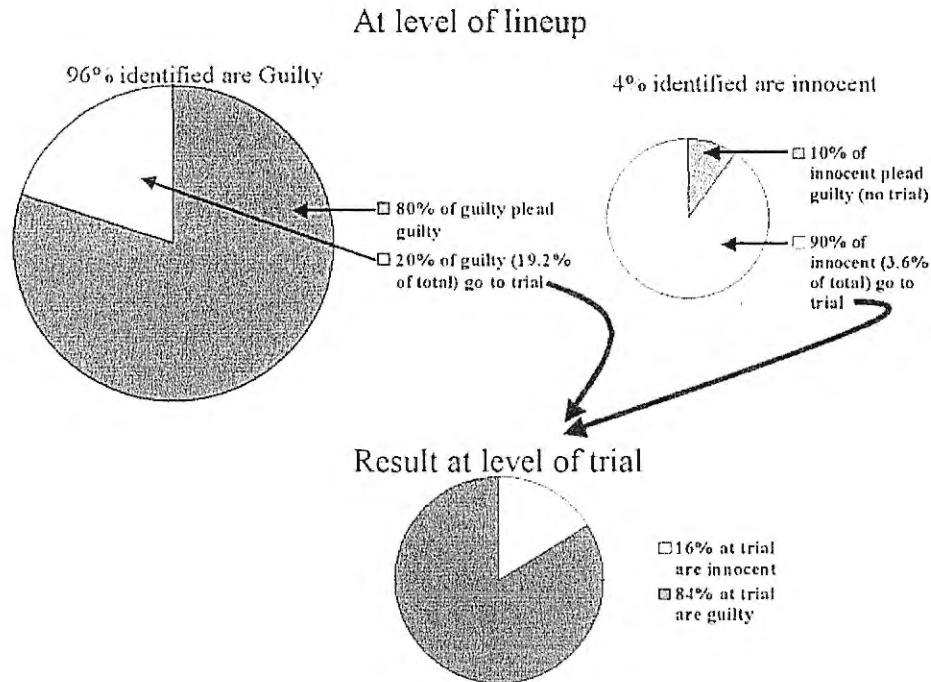


Fig. 1. The "pleading effect" (Charman & Wells, 2006). Assuming first that 96% of suspects identified from a lineup are guilty and 4% are innocent, if 80% of the guilty suspects and 10% of the innocent suspects plead guilty (thereby foregoing a trial), the result is that 16% of the defendants who go to trial will be innocent—that is, cases of mistaken identification.

Cross-Race Identification

Meissner and Brigham (2001a) published the most recent broad review of research on the problems associated with what has sometimes been called other-race or cross-race identification impairment or own-race bias (ORB). Meissner and Brigham analyzed data from 39 research articles, with 91 independent samples involving nearly 5,000 participant witnesses. They examined measures of correct identification and false-alarm rates, as well as aggregate measures of discrimination accuracy and response criterion. They reported that the chance of a mistaken identification is 1.56 times greater in other-race than in same-race conditions and that the witnesses were 1.4 times more likely to correctly identify a previously viewed own-race face as they were to identify an other-race face. Participants were more than 2.2 times as likely to accurately categorize own-race faces as new versus previously viewed as they were to accurately categorize other-race faces. Meissner and Brigham explored the question of whether cross-race contact might reduce these effects and found that such contact played only a small role in ORB, accounting for just 2% of the variability across participants (see also Wright, Boyd, & Tredoux, 2003). They also found that the amount of viewing time available to witnesses significantly influenced ORB; specifically, false alarms to other-race faces increased when study time was limited.

Recent research by Pezdek, Blandon-Gitlin, and Moore (2003) examined cross-race impairment in kindergarten

children, third graders, and young adults who viewed black and white target faces and a day later were tested with a six-person lineup. These researchers observed the usual cross-race effect, which did not differ across age groups: In each age group, cross-race identification was less accurate than own-race identification.

Stress

Despite the importance of knowledge about the effects of stress on witnesses, researchers cannot simulate violent crimes and pose a threat to the well-being of experimental subjects. Researchers have therefore resorted to a variety of manipulations to induce stress, including the use of violent versus nonviolent videotaped crimes. Increased violence in videotaped reenactments of crimes has been shown to lead to decrements in both identification accuracy and eyewitness recall (Clifford & Hollin, 1981; Clifford & Scott, 1978), but this finding is not universal (Cutler, Penrod, & Martens, 1987a).

Deffenbacher et al. (2004) recently published a meta-analysis of stress effect studies. The meta-analysis was conducted on 27 tests of the effects of heightened stress on identification accuracy and on 36 tests of its effect on recall of crime-related details. They found that high levels of stress negatively affected both types of memory. The effect of stress was notably larger for target-present than for target-absent lineups—that is, stress particularly reduced correct identification rates. The effect was also

TABLE 1
Percentages of Accurate and Mistaken Identifications From Study of Eyewitness Identification Under High Versus Low Stress

	High stress	Low stress
Correct identifications [target-present]		
Live lineup method	27	62
Photospread method	36	76
Sequential photo method	49	75
Mistaken identifications [target-absent]		
Live lineup method	45	50
Photospread method	48	61
Sequential photo method	0	0

Note. Source: Morgan et al. (2004).

considerably larger for eyewitness-identification studies that simulated eyewitness conditions (e.g., staged crimes) than for face-recognition studies.

These effects are well illustrated in a study by Morgan et al. (2004) that examined the eyewitness capabilities of more than 500 active-duty military personnel enrolled in a survival-school program (see Table 1). After 12 hours of confinement in a mock prisoner-of-war camp, participants experienced both a high-stress interrogation with real physical confrontation and a low-stress interrogation without physical confrontation. Both interrogations were 40 minutes long; they were conducted by different persons. A day after release from the camp, and having recovered from food and sleep deprivation, the participants viewed a 15-person live lineup, a 16-person photo spread, or a sequential presentation of photos of up to 16 persons. Regardless of the testing method, as Table 1 shows, memory accuracy for the high-stress interrogator was much lower overall than for the low-stress interrogator.

Weapon Focus

Weapon focus refers to the visual attention eyewitnesses give to a perpetrator's weapon during the course of a crime. It is expected that the attention the eyewitness focuses on the weapon will reduce his or her ability to later recall details about the perpetrator or to recognize the perpetrator. Researchers have assessed eyewitness recall of various crime details in an attempt to establish the parameters of weapon-focus effects on perception and memory; these efforts were reviewed in a meta-analysis by Steblay (1992). The review included 19 studies with a total sample of 2,082 participants. The weapon-focus effect on identifications was statistically significant but reflected a modest impairment; the effect on description accuracy was larger. The analysis indicated that the weapon-focus effect was larger in target-absent lineups and when memory was generally impaired. Research by Mitchell, Livosky, and Mather (1998); Pickel (1998, 1999); and Shaw and Skolnick (1999) indicates that any surprising object can draw attention away from the perpetrator

and that novelty, rather than threat, may be the critical ingredient in the effect.

Researchers have tried to detect weapon-focus effects in field studies, and the results are somewhat conflicting. Tollestrup, Turtle, and Yuille (1994) examined the effect of weapon focus on the rate of suspect identification and obtained data consistent with laboratory findings. But Valentine et al. (2003) did not find a weapon-focus effect in their study of 640 attempts by eyewitnesses to identify the alleged target in 314 lineups. Of course, as noted earlier, in nonexperimental studies it is difficult to control for variables that might obscure a weapon-focus effect. For example, in the study by Valentine et al., the primary outcome variable is suspect choices rather than perpetrator choices (i.e., witness identifications are intended to determine whether suspects are perpetrators)—whereas in experimental research the identity of the perpetrator is known to the researcher.

Field research can also suffer from *selection effects* that can obscure the effects of variables of interest. For example, a true weapon-focus effect could be obscured if witnesses to crimes involving weapons believe that their memory is weak and are therefore less inclined to attend lineups. The result could be a reduction in the number of weapon-focus-impaired witnesses presented with lineups and thus a reduced number of cases of weapon focus.

As mentioned earlier, a selection effect might actually reduce our concern about the potential impact of weapon focus on eyewitness performance. On the other hand, it is conceivable that more intensive police investigations of weapon-present cases produce a higher proportion of perpetrator-present lineups for weapon-present witnesses, with the result that the apparent performance of weapon-present witnesses is improved even though their memories are impaired. If investigations of all crimes were similarly intense, a weapon-focus effect might emerge. One might also imagine that the police are more motivated to "help" weapon-present witnesses identify perpetrators who use weapons and who thus pose a threat to society. Such help might take the form of suggestive instructions to witnesses and suggestive lineups.

Exposure Duration

Common sense tells us that the amount of time available for viewing a perpetrator is positively associated with the witness's ability to subsequently identify him or her. A meta-analysis by Shapiro and Penrod (1986) showed that the linear trend for exposure time was associated with improved performance. The effects of exposure time were illustrated in a study by Memon, Hope, and Bull (2003) in which mock witnesses viewed a realistic videotaped crime in which the target/perpetrator was visible for 12 versus 45 seconds. Witnesses were tested with target-present and target-absent arrays 40 minutes later. The proportion of correct identifications in target-present arrays and

correct rejections in target-absent arrays increased substantially when exposure time increased from 12 seconds to 45 seconds (from 32% to 90% for correct identifications and from 15% to 59% for correct rejections), although mistaken identifications in target-absent arrays remained high even with longer exposure (85% at 12 seconds and 41% at 45 seconds).

Disguise

It is common for people to don disguises before engaging in criminal acts. Full-face masks, stockings, hats, and hoods can be quite effective in diminishing the facial-feature cues necessary for recognition (Cutler, Penrod, & Martens, 1987a, 1987b; McKelvie, 1988; Patterson & Baddeley, 1977). For example, Cutler et al. (1987b) had participants view a videotaped liquor store robbery and later attempt an identification from a videotaped lineup. In half of the robberies, the robber wore a knit pullover cap that covered his hair and hairline. In the other half, he did not wear a hat. The robber was less accurately identified when he was disguised: 45% of the participants identified the robber in the lineup test if he wore no hat during the robbery; only 27% identified him if he wore a hat during the robbery.

Shapiro and Penrod, in their 1986 meta-analysis, coded experiments for whether or not faces were changed between the initial viewing and recognition phases. Transformations included changes in facial hair and deliberate disguises, such as masks or hats. Nontransformed faces were more accurately recognized (effect size $d = 1.05$; 75% vs. 54%) and less often falsely identified ($d = .40$; 22% vs. 30%) than transformed faces were.

Not all disguises or changes in appearance work. Yarmey (2004) found similar levels of identification accuracy for a young woman viewed for 15 seconds in naturalistic circumstances, regardless of whether or not she wore a baseball cap and dark sunglasses. There was, however, an interaction involving disguise: Witnesses who were given enhanced retrieval instructions (involving mental rehearsal of the encounter) made significantly more correct rejections in the no-disguise condition than in the disguise condition.

Retention Interval

Common sense tells us that memory declines over time. Can we expect eyewitness-identification accuracy to decline as the time between the crime and the identification test increases? Shapiro and Penrod (1986) included retention interval in their meta-analysis. When studies that manipulated retention interval were grouped into long versus short time delays (the exact manipulation depended on the study), longer delays led to fewer correct identifications ($d = .43$; 51% vs. 61%) and more false identifications ($d = .33$; 32% vs. 24%). Across all the studies examined in that meta-analysis (including those that did not directly manipulate retention interval), retention interval also proved an

important determinant of correct identifications ($r = -.11, p < .05$), although there was no significant relationship with false identifications.

Witness Intoxication

Read, Yuille, and Tollestrup (1992, Experiment 1) tested identification accuracy one week after a staged event using a six-person lineup; they found that alcohol intoxication while witnessing the event was associated with a lower rate of correct identifications when the level of arousal (manipulated by varying the participants' perceptions of the probability of getting caught stealing an item from an office) was low during the event. False identification rates were the same for intoxicated and sober participants. Of course, after one week the participants were no longer intoxicated, which raises the question of what the effect of intoxication at viewing and identification would be.

Dysart, Lindsay, MacDonald, and Wicke (2002) note that the popular belief is that intoxicated witnesses are less accurate than sober witnesses. However, one theory concerning "alcohol myopia" (Steele & Josephs, 1990) predicts an interaction between blood-alcohol level and identification procedures in which witnesses who were intoxicated at encoding will be less accurate only in target-absent conditions. The theory suggests that, compared with intoxicated witnesses, sober witnesses will encode more information/cues about the perpetrator, which will facilitate correct rejections in target-absent procedures. Intoxicated witnesses are likely to encode only salient cues, and erroneous identifications will result where more subtle cues would have indicated that the suspect was not the target. On the other hand, using salient cues will be effective for intoxicated witnesses when the target is present.

Dysart et al. (2002) examined the effect of alcohol consumption on identification accuracy using "showups," a procedure in which the witness is shown the suspect alone, without any fillers. A showup is the identification procedure most likely to be used by police with intoxicated witnesses. As predicted, the researchers found that in the target-present showup condition, blood-alcohol level was not significantly related to correct identification; however, in the target-absent condition, higher blood-alcohol levels were associated with a higher likelihood (52%) of a false identification than were lower blood-alcohol levels (22%).

SYSTEM VARIABLES

System variables (variables that can be controlled in actual cases) tend to center on factors that come into play after the witnessed event has passed. At that point, the legal system has some control over a number of important variables, but not necessarily all variables. For instance, first responders at a crime scene can separate eyewitnesses so they do not influence each other, but some interactions could have already occurred before the arrival of investigators. Similarly, although investi-

gators have total control over how a lineup is conducted, some identifications occur outside the control of the legal system—for example, when an eyewitness spontaneously identifies someone on the street as the perpetrator of an earlier crime.

System variables tend to be divided into two broad categories. One category is interviewing eyewitnesses, a process that generally involves recall memory. The other category is the identification of suspects, a process that generally involves recognition memory. It is important to note that neither interviewing nor identification is considered by eyewitness scientists to be purely a memory process. Social influence can be a huge factor in both.

The case of James Newsome, a man who served 15 years for a murder he did not commit, is an extreme example of an eyewitness making a positive identification from a lineup, even though his memory told him that the man he identified was not the man who committed the murder. After Newsome was proved innocent and the actual perpetrator was found through physical evidence, eyewitness Anthony Rounds came forward and described how Chicago police had forced him to identify Newsome from the lineup, even though he knew that Newsome was not the man he saw commit the murder. According to Rounds, the lineup administrators told Rounds whom to identify; when he resisted, their intimidating insistence led him to identify Newsome and give confident identification testimony at trial. A lawsuit in 2002 yielded strong evidence to support Rounds's claim, and a jury awarded damages to Newsome; the finding was upheld by the U.S. Seventh Circuit Court of Appeals (*Newsome v. McCabe et al.*, 2002).

Although this is an extreme example, it illustrates how extraneous external variables can influence eyewitness testimony without operating through memory mechanisms. Under other circumstances, social-influence variables are thought to actually influence memory. For instance, a misleading question such as "What kind of hat was the gunman wearing?" when the gunman had no hat could lead an eyewitness to develop a memory for a hat that did not exist. For these reasons, eyewitness scientists concern themselves with both social-influence variables and memory variables.

Interviewing Eyewitnesses

Research on interviewing eyewitnesses dates back to the early 1900s. Alfred Binet (1900) was the first to study suggestibility in children in France, and William Stern (1904) initiated eyewitness research on interrogation in Germany. Snee and Lush (1941) wrote a short empirical article on the use of interrogatory versus narrative methods of interviewing eyewitnesses. Modern research on the issue undoubtedly owes much to the influence of Elizabeth Loftus, who used the method of asking questions of eyewitnesses to implant misleading information (e.g., Loftus & Palmer, 1974). This line of research paved the way for experimental studies of the effects of explicit and subtle forms of

misinformation imparted during questioning of adult and child witnesses (for reviews see Bruck & Ceci, 1999; Loftus, 2005; Wright & Loftus, 1998). This work led to important theoretical advances in our understanding of the mechanisms underlying eyewitness suggestibility in interviews. Examples include the source-monitoring framework (Lindsay & Johnson, 1989; Mitchell & Johnson, 2000; Poole & Lindsay, 2001); fuzzy-trace theory (Brainerd & Reyna, 1998; Memon, Hope, Bartlett, & Bull, 2002); an activation-based memory model (Ayers & Reder, 1998); retrieval-induced forgetting (MacLeod, 2002); the role of metacognition (Koriat, Goldsmith, & Pansky, 2000); and the social-influence approach (Echterhoff, Hirst, & Hussy, 2005; Gabbert, Memon, & Wright, in press; Zaragoza, Payment, Ackil, Drivdahl, & Beck, 2001).

In this monograph, we do not discuss the mechanisms responsible for distortions in information retrieved in eyewitness interviews. Instead, we use one example of a procedure that arose as a result of a direct request from the police to improve the probative value of eyewitness evidence. This example shows how researchers have attempted to wrap their knowledge about memory and social influence into a set of procedures for interviewing eyewitnesses. It is also the most developed and extensively researched procedural package for gathering detailed reports from cooperative eyewitnesses. (Readers who are interested in other approaches to interviewing eyewitnesses, including interviews designed to detect deception, should refer to reviews by Granhag & Stromwell, 2004; Memon & Bull, 1999; Poole & Lamb, 1998; and Vrij, 2000.)

The Cognitive Interview

The cognitive interview (CI) was initially developed by the psychologists R. Edward Geiselman (University of California, Los Angeles) and Ronald P. Fisher (Florida International University) in the early 1980s (Geiselman et al., 1984; Geiselman, Fisher, MacKinnon, & Holland, 1985) and has resulted in more than two decades of research. Two main forces drove the development of the CI. The first was a request from police officers and legal professionals to improve the practices of police interviewers when gathering information from eyewitnesses. Analysis of the techniques used by untrained police officers in Florida (Fisher, Geiselman, & Raymond, 1987) suggested that there existed some fundamental problems in the conduct of interviews, leading to ineffective communication and poor memory performance. The "standard police interview" was characterized by constant interruptions, excessive use of a predetermined list of questions with an expectation that witnesses could provide answers, and questions that were timed inappropriately. For example, if the witness was describing one of the perpetrators, the officer might switch the line of questioning to the actions of another perpetrator. Interestingly, the same problems were identified in studies of the typical police interview in Britain (George, 1991) and Germany (Berresheim & Weber, 2003).

TABLE 2
Revised Cognitive Interview Procedure

Step 1. Build rapport	
(a) Personalize the interview	Exchange names. Make sure the witness is comfortable and is willing to try to remember as much as possible. Ask the witness to give as many details as possible but not to guess or fabricate.
(b) Transfer control to the witness	Tell the witness that you do not have knowledge of the event and it is the witness who holds all the relevant information. Let the witness choose the starting point for the narrative and give the account at his or her own speed and in his or her own words. Do not interrupt the witness, if at all possible. Listen actively to what he or she has to say. Allow for pauses.
Step 2. Recreate the context of the original event and ask the witness to report in detail.	
To reinstate context, invite the witness to close his or her eyes and place himself or herself back at the scene.	
Step 3. Open-ended narration	
(i) Request narrative description	Ask the witness to give a narrative account of the event in his or her own words. If clarification is required, use open-ended questions. Do not interrupt the narration to ask questions, although prompts such as "tell more" may be used. Avoid judgmental comments and closed (yes/no) questions.
(ii) Focused retrieval	This is not a technique but a general guideline to follow to help the witness concentrate on what he or she is describing by <ul style="list-style-type: none"> • using open-ended questions • allowing for long pauses • not interrupting the witness when he or she is speaking
(iii) Extensive retrieval	Encourage the witness to search through his or her memory more extensively by asking him or her to report details from a number of different perspectives and in different chronological orders.
(iv) Witness-compatible questioning	Time the questions appropriately so they are compatible with the witness's retrieval pattern rather than adhering to a protocol.
Step 4. Closure	
Be sure to leave time to brief the witness and let him or her know what might happen next. Exchange contact information and encourage the witness to get in touch if he or she remembers additional details.	

Note. Adapted from Fisher and Geiselman (1992).

The CI in its present form represents the alliance of two fields of study: communication and cognition. The social-psychological concerns of managing a face-to-face interaction and communicating effectively with a witness were integrated with what psychologists knew about the way people remember things. The social aspects are embodied in what is referred to as a *structured interview*, which consists of a phased procedure (free report followed by open-ended questions) and incorporates techniques to facilitate communication. These techniques include rapport building, which is designed to increase the transfer of control from the interviewer to the witness, and the use of a questioning strategy guided by the witness's own free report rather than one that is based on a predefined protocol. The structured interview resembles the recommended procedure for conducting investigative interviews with witnesses and victims in many countries (see Poole & Lamb, 1998; Westcott, Davies, & Bull, 2002).

The original version of the CI was presented as a set of four specific cognitive techniques for improving eyewitness recall. Following a series of laboratory simulations and field research, the procedure was revised in 1992 (Fisher & Geiselman, 1992). The version of the CI that has subsequently evolved focuses heavily on communication techniques and social dynamics and is a procedure in which the cognitive and communication

components work in tandem. Here we will focus primarily on research and practice relating to the revised CI (also referred to in the literature as the "enhanced" CI). For a summary of the revised CI procedure, see Table 2.

The revised CI comprises several phases during which the interviewer engages with and establishes rapport with the witness, asks the witness to provide a narrative account of the witnessed event, and then probes with questions relating to the details the witness has provided. Throughout the process, the interviewer interrupts as little as possible, allows the witness to dictate the subject matter and sequence of questioning, and listens actively to what the witness has to say. One of the primary aims of the CI is to facilitate the exchange of information between the witness and interviewer through effective communication.

The first task of the interviewer is to build rapport with the witness. This rapport serves two functions. First it puts the witness at ease, minimizing the discomfort and distress sometimes associated with sharing an intimate or fearful experience with a stranger. Second, there is some evidence that building rapport with open-ended questions can increase the accuracy of a child witness's report (Roberts, Lamb, & Sternberg, 2004). An important component of rapport building in the revised CI is for

the interviewer to explicitly “transfer control” to the witness (see Table 2 for details).

The “cognitive” part of the CI relies on two theoretical principles. First, a retrieval cue is effective to the extent that there is an overlap between the encoded information and the retrieval cue. Reinstatement of the original encoding context increases the accessibility of stored information (Tulving & Thomson’s encoding specificity hypothesis, 1973). Second, multiple trace theory (Bower, 1967)—which proposes that memories are made up of networks of associations rather than discrete and unconnected incidents—states that a memory can be cued by several means and that information not accessible with one technique may be accessible with another.

Having established rapport with the witness, the interviewer instructs the witness to mentally reconstruct the physical and personal contexts that existed at the time of the crime. Interviewers can help witnesses by asking them to form an image or impression of the environmental aspects of the original scene (e.g., the location of objects in a room); to comment on any emotional reactions and feelings (e.g., surprise, anger) at the time; and to describe any sounds, smells, and physical conditions (e.g., hot, humid, smoky) that were present. Occasionally a witness can be taken back to the scene of the crime. Once the witness has mentally reconstructed the context, the interviewer asks him or her to provide a detailed account of the event (the free narrative). To extend retrieval, the witness is asked to report all details, including partial or incomplete memories. To minimize editing, Fisher and Geiselman (1992) advised interviewers to instruct witnesses to report everything that comes to mind, even if it is trivial or out of chronological order. In addition to facilitating the recall of additional information, this technique may yield information that can be valuable in piecing together details from different witnesses to the same crime. Roberts and Higham (2002) obtained ratings of the forensic relevance of details elicited with the CI by asking police officers and prosecutors to rate the relevance of each detail to a criminal investigation/court proceeding. At best, only 50% of the information the CI elicited was deemed relevant by forensic experts. Most of the correct, forensically relevant details appeared in the free-narrative account (cf. Memon, Wark, Bull, & Köhnken, 1997).

Once the witness has provided an open-ended account, the CI interviewer can probe for details using open-ended questions and, when appropriate, can ask follow-up questions to clarify what the witness has said. It is imperative that interviewers remind witnesses that if they are unsure of an answer to a question, they should say so and not guess. Appropriate sequencing of the interviewer’s questions (referred to as interviewee-compatible questioning) is critical. Each eyewitness will have a unique mental representation of the event, depending on the details or aspects of the event he or she attended to and the order in which events unfolded for him or her (Fisher & Schreiber, in press). The interviewer should be guided by the

interviewee’s pattern of recall rather than adhering to a rigid protocol or predetermined checklist. For example, if an interviewee is describing a suspect’s face, this indicates that the mental image of the perpetrator’s face is currently active and details about the face are accessible (Pecher, Zeelenberg, & Barsalou, 2003). At this point, the interviewer should ask questions relating to the suspect’s appearance and not switch to another topic, such as the suspect’s car.

In a CI, the witness is encouraged to focus or concentrate on mental images of the various parts of the event, such as the suspect’s face (Fisher & Geiselman, 1992). The interviewer exhausts the content of each image by asking the witness to form an image and then describe it in as much detail as possible. Bekerian and Dennett (1997) refer to this focus on specific features as “molecular imaging,” as compared to the general “molar” approach, which emphasizes reinstating environmental context. To effectively engage the interviewee in focused retrieval, the interviewer must speak slowly and clearly, pausing at appropriate points to allow the interviewee time to create an image and respond (Memon, 2006). Unfortunately, the use of imagery can produce increases in errors and increased use of inferences in eyewitnesses’ spoken reports (Bekerian & Dennett, 1997; for a discussion, see Stevenage & Memon, 1997).

Alternative retrieval cues can be used to access an event. For example, witnesses can be asked to recall an event in different temporal order or from different perspectives. Some researchers have found that witnesses can recall additional details if they deviate from the event script and describe the event from the end or the middle or if they describe its most memorable aspect (Fisher & Geiselman, 1992; Geiselman & Callot, 1990). However, in other studies, no additional details have surfaced when the witness recalls the event for a second time, in a different order (Memon, Wark, Bull, et al., 1997). One of the most controversial components of the original CI was that witnesses were asked to “recall” an event from the perspective of another witness or from another location at the scene. The instruction to change perspective typically does not yield additional details and can increase errors, particularly if witnesses do not understand what the interviewer wants them to do (Boon & Noon, 1994; Memon, Cronin, Eaves, & Bull, 1993). Fisher, Brennan, and McCauley (2002) suggest that changing perspectives could be potentially valuable for highly traumatized witnesses who might find it too stressful to describe the event from their own perspective. However, forensic investigators are uncomfortable with the instruction to change perspective, presumably because it could invite witnesses to speculate (Kebbell, Milne, & Wagstaff, 2001).

Evaluation of the CI

The CI has been examined in approximately 65 studies to date. A meta-analysis of 53 studies found a median increase of 34% in the amount of correct information generated in the CI as compared with a different interview model (Köhnken,

Milne, Memon, & Bull, 1999). There was also an increase in incorrect details; we will return to this later. With the exception of two field studies, all the studies have tested volunteer witnesses (typically college students) in the laboratory. Witnesses observe either a live event or a videotape of a simulated crime. After a short delay (typically hours or days), the witnesses participate in a face-to-face interview. The witnesses receive either the CI or a control interview. The control is either a standard police interview or a structured interview that incorporates the phased approach referred to earlier. The interviews are tape recorded, transcribed, and then scored for the number of correct and incorrect statements. The accuracy of the reported statements is high and comparable for both types of interview.

Günter Köhnken and his colleagues in Germany (Köhnken, Schimmossek, Aschermann, & Höfer, 1995; Köhnken, Thurer, & Zorberbier, 1994) were the first to demonstrate the superiority of the CI over the structured interview. In their studies, the structured-interview group received training in basic communication skills that was comparable in quality and length to the CI group's training. The training included instruction on rapport building and the use of various types of questioning. In the 1994 study, both interviewees and interviewers were non-psychology students with no prior experience in investigative interviewing. The to-be-remembered event was a videotape showing a blood donation. Participants were tested a week after viewing the videotape. Each interviewer conducted one interview ($n = 30$). The CI significantly increased the amount of correctly recalled information over the structured interview without increasing the number of errors and confabulated (made-up) details. In a subsequent study with adult participants, a small increase in confabulated details was also noted (Köhnken et al., 1995).

Memon and colleagues (Memon, Wark, Holley, Bull, & Köhnken, 1997) directly examined whether the CI advantage was due to the use of the communication components of the revised CI (rapport building, transfer of control, and elements of the structured interview) or of the cognitive components (context reinstatement, imagery, reverse order, and reporting in detail). As in the Köhnken research, cognitive and structured interviewers received similar training, and each group was led to believe it was using the superior interview technique. A third group of interviewers served as the control and was not trained. Both trained groups elicited more correct information than the untrained group did. However, this was offset by the fact that they also produced a significantly higher number of errors and confabulations than the untrained group. These findings are important in themselves but also raise the question of what is an appropriate control group. The cognitive interviews produce more correct details than do interviews conducted by an untrained group of interviewers. However, a structured interview with some of the communication components of the CI built in can also yield increases in correct recall. The increase in errors that occasionally occurs could be somewhat problematic (for a discussion, see Memon & Stevenage, 1996; Memon, 2006).

Some have argued that the production of incorrect as well as correct information suggests that the CI may be affecting report criteria (Memon & Higham, 1999; Roberts & Higham, 2002). Others argue that there is no suggestion that witnesses should lower their output criteria to produce unsure responses and interviewers should instruct witnesses not to guess or fabricate details (Fisher et al., 2002). It is important to note that accuracy rates typically do not differ between the CI and comparison groups.

The efficacy of the CI with nonstandard populations—notably, young children, the elderly, and people who are intellectually impaired—has also been examined. Given that the primary aim of the CI is to increase the amount of information retrieved, it may be the most effective procedure to use with young children, because children tend not to provide as much information as adults do. The results are somewhat mixed. The CI has been found to increase the amount of correct information recalled by children aged 7 to 11 years when the comparison group was a standard (untrained) group (Saywitz, Geiselman, & Bornstein, 1992). When the comparison is a structured interview, the CI increases correct information but can also increase errors in 8- to 9-year-olds (Memon, Wark, Bull, et al., 1997; Milne, Bull, Memon, & Köhnken, 1995).

More recently, Akehurst, Milne, and Köhnken (2003) examined whether the revised CI would aid the recall of children aged 8 to 9 years and 11 to 12 years after a 6-day delay. Children viewed a video of a shoplifting and were interviewed 4 hours or 6 days later. The CI led to an increase in correct recall as compared with a structured interview, with no increase in errors. There were no interactions involving age group or delay. As to the suitability of the CI for younger children, Holliday (2003a) reported that a modified version of the revised CI could increase the amount of correct information recalled in the narrative (free-recall) phase of the interview in 4- to 5-year-olds as compared with a structured interview. In a later study with 4- and 8-year-olds, Holliday (2003b) found that a CI given after postevent misinformation reduced children's reporting of misinformation in the interview (for a similar finding with 8- to 9-year-olds, see Memon, Wark, Bull, et al., 1997).

There is some evidence to suggest the CI can aid the recall of adults (Milne, Clare, & Bull, 1999) and children (Milne & Bull, 2006) with mild learning disabilities, although further research is required with this population, using larger sample sizes and people with a broader range of learning difficulties.

To date, there have only been two published studies of the efficacy of the CI when the witnesses are older adults. Mello and Fisher (1996) found the CI led to similar increases in correct recall when the participants were older adults (mean age = 72 years) but Searcy, Bartlett, Swanson, and Memon (2001) found no differences in correct identification (recognition) of a target when witnesses aged 62–79 years were interviewed using a procedure resembling the CI.

The failure to find an effect of CI on recognition (in this case, identification of a target) is consistent with earlier studies. In four separate studies, Fisher, Quigley, Brock, Chin, and Cutler (1990) found no advantage of the CI in recognition, but it did elicit better descriptions of the target as compared with a no-instruction control. Gwyer and Clifford (1997) compared the revised version of the CI with a structured interview and again found no reliable effects on recognition performance in target-present conditions but a reduction in false identifications in target-absent conditions in their short (48-hour) delay group (cf. Yarney, 2004). This finding did not generalize to the long (96-hour) delay group.

These findings come as no surprise. The literature indicates that environmental manipulations of context are not effective in a recognition test when alternative cues are available. According to Smith and Vela (2001), this is because the influence of contextual cues will be reduced or will be outshone when there are strong retrieval cues present at the time of the memory test. This is referred to as the outshining hypothesis. For instance, in a recognition test in which a copy of the item to be remembered is provided, this item serves as a retrieval cue, and contextual cues are rendered ineffective. When the task is to recall an item of information in the absence of a specific retrieval cue, the reinstatement of context should guide memory (Smith, 1994). However, as pointed out by Fisher and Schreiber (in press), the outshining hypothesis leads to the prediction that experimental manipulations should have smaller effects in target-present than in target-absent conditions.

Future studies should examine whether witnesses interviewed with the revised CI are more likely to make correct rejections and whether the effect of a CI in an identification situation will vary as a function of retention interval (Gwyer & Clifford, 1997) and other relevant system and estimator variables.

Application/Training

Police officers complain that eyewitnesses seldom provide sufficient information (Kebbell & Milne, 1998). The CI has proved to be a prime system variable in that a full and accurate eyewitness statement may determine whether or not a case is solved. The question is, what impact has the CI had on interviewing practice?

Despite the extensive scientific research on the CI, knowledge and application of it is not widespread among investigators in the United States, and it does not appear to have had a substantial impact on the methods police officers use to interview witnesses (Fisher & Schreiber, in press). Nevertheless, personnel from police and nonpolice organizations have received training in the technique. These organizations include the FBI; the National Transportation Safety Board; the Department of Homeland Security; the Federal Department of Law Enforcement; and the Bureau of Alcohol, Tobacco, and Firearms. NASA personnel will receive such training in the near future. The training has varied across states and differs between federal and state training

academies. Fisher and Schreiber (in press) note that federal investigators receive 18 hours of training in interviewing, including techniques for interrogating suspects and nonpsychological topics such as the legal aspects of interviewing.

In England and Wales, the CI was introduced in a booklet to every police officer as part of the national investigative interviewing package in 1992. However, while Britain has some good examples of police training in the CI, with input to the trainers from researchers, the training is typically limited to the detective ranks or is only provided in a minimal, introductory form to junior officers (see Milne & Bull, 2006). A survey of police officers (Kebbell, Milne, & Wagstaff, 1999) suggested that relatively few officers used the full CI in practice. Training programs have also been developed in other European countries, as well as in Australia, New Zealand, and Israel (Fisher, 2005). The efficacy of the CI has also recently been demonstrated in Brazil (Stein & Memon, in press), with the aim of introducing it to the Brazilian police and judiciary in the near future.

Given the extensive research on the CI and the light it has shed on faulty interviewing practices, have police interviews improved in the 20 years since the CI was first introduced? In a recent analysis of police interview techniques, Fisher and Schreiber (in press) asked 23 Miami detectives experienced in investigations of robbery, sexual assault, homicide, and internal affairs to tape record their witness interviews. Analysis of these interviews revealed techniques and behaviors similar to those identified 20 years earlier. This was particularly disappointing in view of the scientific progress made in the field and the efforts by Fisher and Geiselman to disseminate their findings to practitioners and to implement training programs.

The picture is just as bleak across the Atlantic. Clarke and Milne (2001) conducted a national evaluation of investigative interviewing training (the Planning, Engage, Account, Closure, Evaluation—or PEACE—model) in England and Wales to see if it had improved workplace practice. The PEACE model provides two ways of obtaining an interviewee's account: the CI and conversation management. The latter involves asking witnesses to give their own account of events; the interviewer then selects specific topics from the account and questions the witnesses in a logical sequence. Clarke and Milne (2001) found little evidence of any cognitive interviewing taking place. Most officers seem preoccupied with getting a statement from the witness and asking closed questions. One reason for the lack of development in witness-interviewing skills is that resources have targeted the use of interrogative techniques or suspect interviews at the expense of gathering information from cooperative witnesses (Milne & Bull, 2006).

Resources need to be directed toward training in witness-interviewing practices. Milne and Bull (2006) argue that this will involve procedural changes in collecting evidence in the United Kingdom, such as electronic recording of all witness interviews to maintain an accurate record of the original ac-

count, assessment of training and supervision of witness, and victim interviews to ensure that appropriate techniques are used. With respect to the United States, R.P. Fisher (personal communication, March 28, 2006) has noted that nonpolice groups, such as engineers, have displayed a willingness to use CI in investigations, suggesting that perhaps those with an academic background or a motivation to use investigative techniques to arrive at solutions find it easier to understand the theory behind the CI. Following this line of reasoning, perhaps police officers with specialist skills (homicide, child protection) might benefit more from training in the CI. However, those who are specialists may already have an established protocol for interviewing and thus be less willing to adopt new techniques (Memon, Milne, Holley, Bull, & Köhnken, 1994).

We advocate a two-tiered approach to training. First, there is a need for more extensive training programs on witness-interviewing techniques for new police officers. Training and examples of how faulty witness testimony can contribute to miscarriages of justice might also prove fruitful (see Savage & Milne, in press). The monitoring and assessment of witness interviews (e.g., recording) is essential. A second approach is to present trainees with a simpler, more accessible version of the cognitive interview (e.g., Davis, McMahon, & Greenwood, 2004) to encourage wider use.

Identifying Criminal Suspects

The identification of a criminal suspect can be the most important eyewitness evidence that is presented at a trial. This is especially true when the eyewitness claims to have seen the suspect commit the criminal act. In that case, the eyewitness-identification testimony is direct evidence of guilt in the sense that the accuracy of the identification has a one-to-one relationship to the ultimate issue of whether the suspect committed the crime. In other situations, eyewitness identification evidence may be circumstantial—for instance, if the eyewitness only saw the person in the vicinity of the crime or saw the person leaving a building at a certain time. In these cases, other types of evidence are needed to complete the inference that the person who was seen is the same person as the one who committed the crime. Regardless of whether the identification is direct or circumstantial, those who observe identification testimony (for example, jurors) are likely to accept it as accurate if the eyewitness is confident and consistent (e.g., Berman & Cutler, 1996; Bradfield & Wells, 2000; Brigham & Bothwell, 1983; Cutler, Penrod, & Stuve, 1988; Lindsay, Lim, Miranda, & Cully, 1986; Lindsay, Wells, & O'Connor, 1989; Lindsay, Wells, & Rumpel, 1981; Maas, Brigham, & West, 1985; Wells & Leippe, 1981; Wells, Lindsay, & Ferguson, 1979).

Lineups

A primary method for obtaining identifications of criminal suspects is the use of the lineup. Lineups can be either live, as commonly seen on TV shows, or photographic. In the experience

of the first and third authors, most lineups in the United States are conducted using photographs. At its simplest level, a lineup involves placing a suspect among distracters (called fillers) and asking the eyewitness if he or she can identify the target. The lineup is more complex than it at first appears. Understanding how mistaken identifications can occur with lineups and what kinds of system improvements can be made to prevent mistakes requires an understanding of the structural properties of lineups and their possible outcome distributions.

Lineup Structure. Regardless of whether there is more than one culprit, or target, a lineup should contain only one suspect, with the remaining members being known-innocent fillers (Wells & Turtle, 1986). It is critical to keep in mind that the suspect might or might not be the target (i.e., might or might not be the actual culprit). Hence, we will refer to two possible states of truth: (a) the suspect is the target, and (b) the suspect is not the target. Because there is only one suspect per lineup, these two states of truth are equivalent to target-present and target-absent lineups. In a target-present lineup, two kinds of errors can be made: (a) an incorrect rejection (making no identification), and (b) the identification of a filler. Note that one cannot mistakenly identify an innocent suspect in a target-present lineup. The only time an eyewitness can mistakenly identify an innocent suspect is in a target-absent lineup. Target-absent lineups can also result in filler-identification errors, but these errors would not result in charges being brought against an innocent person. We reserve the term “mistaken identification” to refer to the identification of an innocent suspect; the identification of anyone other than the suspect is called filler identification. Thus, the structural properties of a lineup produce the set of possible outcomes shown in Table 3. In an experiment, participant witnesses are shown either a target-present or target-absent lineup to simulate the real-world fact of an unknown probability that the police are focusing on an innocent suspect. The proportion of target-present and target-absent lineups (the target-present base rate) is commonly 50/50 for experiments, but Bayesian statistics permit quantitative analyses of what happens across all possible base rates for any given experiment (see Wells & Lindsay, 1980; Wells & Olson, 2002; Wells & Turtle, 1986).

Typical Outcome Distributions. As would be expected from better-than-chance performance, experiments typically show that accurate identifications are more likely than inaccurate identifications and that true rejections are more likely than are false rejections (Clark, 2003; Wells & Lindsay, 1980; Wells & Olson, 2002). Notice, however, that there are two types of filler identifications. Filler identification Type 2 is a “miss” in the sense that the target was present and could have been chosen but the eyewitness picked someone else. Filler identification Type 1 is an accurate rejection in the sense that the suspect is innocent and the eyewitness did not pick him or her. In general, experiments show that Type 2 filler identifications are more likely than

TABLE 3
Possible Outcomes From a Lineup

State of truth	Response of Eyewitness		
	Identification of suspect	Identification of filler	No identification
Suspect not target	Accurate identification	Filler identification type 1	False rejection
Suspect is target	Mistaken identification	Filler identification type 2	True rejection

Note. Filler identification type 1 can be construed as an accurate rejection in the sense that the target was not present and the eyewitness did not pick him or her. Filler identification type 2 is a "miss" in the sense that the target was present but was not picked. Source: Charman & Wells (2006).

are Type 1 filler identifications (Wells & Olson, 2002). This makes sense and fits well with the concept of relative judgments (Wells, 1984), in which it is presumed that eyewitnesses tend to select the person who looks most like the target. When the target is absent, the chances increase that one of the fillers will be perceived as looking like the target. Usually, eyewitness-identification performance is calculated by the extent to which accurate identifications exceed mistaken identifications and true rejections exceed false rejections. However, the rate of mistaken identifications can be decreased without increasing correct rejections by shifting identifications to fillers in the target-absent lineup. This is a key to understanding how careful selection of fillers for lineups can reduce mistaken identifications even if it does not reduce the propensity of eyewitnesses to attempt identifications from target-absent lineups.

Target Removal Without Replacement. The relative-judgment conceptualization (Wells, 1984) has permeated the literature on lineups. It simply states that eyewitnesses have a tendency to identify a person from the lineup who looks most like their memory of the target relative to the other lineup members. As long as the actual target is in the lineup, the relative-judgment process should work well. However, if the actual target is not in the lineup, problems ensue, because there will always be someone who looks more like the target than the other lineup members. Various results have been interpreted as supporting the relative-judgment conceptualization, but the removal-without-replacement (RWR) effect is the best evidence in support of the relative-judgment conceptualization.

In the original demonstration of the RWR effect (Wells, 1993), eyewitnesses viewed either a six-person lineup that contained the target or a five-person lineup in which the target was removed and not replaced with anyone. In both conditions, the eyewitnesses were instructed that the target might not be present (see following section on pre-lineup instructions). When the target was present, 54% picked the target, 21% selected no one, and 25% selected fillers. Wells reasoned that if the 54% represented true recognition rather than a relative judgment, removal of the target should result in the 54% joining the 21% in picking no one. When the target was removed, however, only 32% selected no one, and 68% selected fillers. Thus, among the 54% selecting the target when the target was present, it is es-

timated that 79.6% of them (43%/54%) would have selected one of the fillers in the absence of the target. Recent data show the RWR effect to be robust across a variety of conditions, and the magnitude of the effect appears to be greater when memory is weaker (Clark & Davey, 2005; MacLin, Wells, & Phelan, 2004). There remains some debate about the psychological processes underlying the RWR effect. Ebbesen and Flowe (n.d.), for instance, suggest that it could simply represent a downward criterion shift that occurs when the target is removed. Regardless of the interpretation, the RWR effect illustrates the substantial risk that accrues to an innocent suspect when the actual target is not present.

The effect also further illuminates the problem of filler selections that we noted earlier in the discussion of archival studies using police files, in which one third of positive identifications by witnesses were identifications of innocent fillers. In the American archival study, Behrman and Davey (2001) found that nearly a quarter of witnesses selected a filler (and 50% selected the suspect). Thus, the average filler was selected by 5% of witnesses—what might be termed "bad guesses" (at least in the sense that witnesses' memories were not good enough to avoid errors; Penrod, 2003). Of course, in a perfectly fair array, one would have to assume that at least another 5% of witnesses would "guess" the suspect. These selections might be characterized in various ways: Steblay et al. (2001) called them "calculated guesses" and Penrod called them "lucky guesses."

As we discuss later, there are reasons to believe that many lineups are not fair and that calculated/lucky guesses produce many suspect identifications that look like "hits" but are really the product of biased arrays and witness guessing. Steblay et al. (2001) reported, for instance, that in studies of target-absent simultaneous arrays in which a filler similar to the suspect was designated the "innocent suspect," that person was picked by 27% of witnesses (across all studies, one of the six fillers—including the suspect—was picked by 51% of witnesses). One might expect that in a fair lineup the innocent filler would be selected by 8.5% (51%/6) of witnesses instead of 27%. The much higher rate of suspect identification suggests that the witnesses had some memory for the appearance of the missing target but not enough of a memory to avoid mistakenly identifying an innocent person.

Pre-Lineup Instructions. One of the first and most fundamental lineup system variables to be tested empirically was the instruction (or warning) to eyewitnesses that the target might or might not be in the lineup. Malpass and Devine (1981) used both target-absent lineups and target-present lineups; they either gave the pre-lineup instruction that the target might or might not be present or gave no instruction. When participants viewed a target-present lineup, the instruction had little effect on the distribution of responses. When they viewed a target-absent lineup, however, the instruction reduced choosing rates dramatically. This general pattern, in which the instruction reduces the chances of both mistaken identifications and filler identifications, has been replicated extensively (see meta-analysis by Steblay, 1997). A more recent meta-analysis indicates that accurate identification rates in target-present lineups might be slightly harmed by the instruction, but the decline in accurate identifications when the target is present is much smaller than the decline in mistaken identifications when the target is absent (Clark, 2005).

Selection of Fillers. The characteristics of the fillers used in a lineup have a strong influence on the chances that an innocent suspect will be identified in a target-absent lineup. In general, if the innocent suspect fits the description of the target and the fillers do not, the innocent suspect is likely to be mistakenly identified. The first empirical demonstration by Lindsay and Wells (1980) was followed by a debate about the optimal criteria for selecting fillers. Two primary strategies for selecting fillers have been advocated. One is to select fillers who resemble the suspect. Luus and Wells (1991) argued against this strategy because it has no "stopping point" and also because it risks creating a lineup of clones, which would reduce accurate identification rates for target-present lineups. Wells, Rydell, and Seelau (1993) found that selecting fillers on the basis of the description given by the eyewitnesses managed to protect the innocent suspect in target-absent lineups without harming accurate identification rates in target-present lineups. On the other hand, selecting fillers on the basis of their resemblance to the suspect harmed hit rates with no additional protection for the innocent suspect in target-absent lineups.

Wogalter, Marwitz, and Leonard (1992) presented another argument against selecting fillers on the basis of their resemblance to the suspect: The "backfire effect" refers to the idea that, somewhat ironically, the suspect might stand out if he or she was the basis for selecting the fillers in the lineup, because the suspect represents the central tendency or origin of the lineup. Clark and Tunnicliff (2001) reported evidence for the backfire effect. However, eyewitnesses' descriptions of the target are often sparse and sometimes do not even match the characteristics of the suspect (Lindsay, Martin, & Webber, 1994; Meissner, Sporer, & Schooler, in press; Sporer, 1996, in press). The general recommendation for selecting fillers for lineups has

been to use the eyewitness's description of the target and to take any additional measures needed to make sure that the suspect does not stand out in the lineup (Wells et al., 1998).

Along with these strategies for selecting fillers, various techniques to assess lineup fairness by using "mock witnesses" have been developed. The task of a mock witness is to examine the lineup and try to discern which person is the suspect. From this mock-witness paradigm, various metrics have been developed to assess the extent to which the suspect stands out unfairly (Malpass & Lindsay, 1999). In lab studies, the mock-witness paradigm appears to be sensitive to lineup bias and is relatively robust across variations in lineup procedure (e.g., simultaneous vs. sequential procedures; see McQuiston & Malpass, 2002). Studies of photo arrays and lineups from actual cases using the mock-witness method reveal that arrays are frequently biased against suspects, who are picked more than twice as often (relative to the fillers) as one would expect by chance alone (Brigham et al., 1999; Valentine & Heaton, 1999; Wells & Bradfield, 1999b).

Lineup Size. A common practice in the United States is to use five or six persons (a suspect plus four or five fillers) in a live lineup and six or eight photos in a photo lineup. For purposes of this discussion of lineup size, we will assume that each lineup member is viable in the sense that the fillers are selected to fit the description and in other ways do not make the suspect stand out. Given a set of properly selected lineup fillers, there is no reason to believe that an innocent suspect has a greater chance than any of the fillers to be identified by an eyewitness. Hence, eyewitness researchers have adopted the assumption that the chances of a mistaken identification are $(1/N) \times p(I)$, where N is the number of lineup members and $p(I)$ is the probability that an eyewitness will make an identification (see Doob & Kirshenbaum, 1973; Wells, Leippe, & Ostrom, 1979). Note that increasing lineup size reduces the chances of a mistaken identification in a negatively decelerating fashion (i.e., each additional lineup member reduces the chances of a mistaken identification less than the previous addition did). Because of this negative deceleration, the addition of persons to the lineup brings diminishing returns. Thus, adding six additional members to a six-person lineup reduces the chances of mistaken identification from 16.7% to 8.3% (i.e., among those making an identification). But, adding six members to a 12-person lineup reduces the chances of mistaken identification from 8.3% to 5.5%.

If reducing the chances of a mistaken identification were the only consideration, increasing the size of the lineup to a very high number is a good idea, even with diminishing returns. But the formula speaks only to mistaken identifications from target-absent lineups and not to the chances of accurate identifications from target-present lineups. The idea of a system variable improvement for lineups is to reduce the chances of a mistaken identification without harming the chances of an accurate

identification. Thus, the critical question is what happens to accurate identifications as a function of increasing lineup size? The eyewitness-identification literature has not derived a precise function relating lineup size to accurate-identification rates. Levi (2002) reported no drop in accurate-identification rates when lineup sizes were increased from 10 to 40 persons. In fact, the literature includes reports of eyewitnesses being able to view up to about 300 photos with little reduction in the chances of an accurate identification (Ellis, Shepherd, Flin, Shepherd, & Davies, 1989; Lindsay, Nosworthy, Martin & Martynuck, 1994). These results are consistent with the general observation that identifications of the target from target-present lineups are not as sensitive to lineup variations as mistaken identifications from target-absent lineups are (Charman & Wells, 2006). For example, the "might or might not be present" instructions have little effect on accurate identifications from target-present lineups but appreciably reduce identifications from target-absent lineups (Stebly, 1997). Similarly, the use of a filler-biased lineup has little effect on accurate identifications from target-present lineups but increases mistaken identifications from target-absent lineups (Wells, Rydell, & Seelau, 1993). Also, suggestive influences from lineup administrators appear to have little effect when eyewitnesses view a target-present lineup but have a strong effect when the eyewitnesses view a target-absent lineup (Haw & Fisher, 2004). More systematic research is needed before it will be possible to conclude that lineup sizes can easily be raised to 20 or more persons without harming accurate identification rates, but there appears to be great promise in the simple idea of increasing the nominal size of lineups.

Double-Blind Lineups. Police conducting a lineup has been likened to psychologists conducting an experiment (Wells & Luus, 1990). One element of this rich analogy is the idea of the double-blind lineup (Wells, 1988). Normally, a lineup is conducted by the case detective, who also assembled the lineup and knows which person is the suspect and which people are merely fillers. The psychological literature on experimenter-expectancy effects reveals the dangers of permitting a person who knows the correct, desired, or expected answer to administer a face-to-face test (Harris & Rosenthal, 1985), and yet this is standard practice for lineups. Experiments have shown that when the lineup administrator is led to believe that a particular lineup member (randomly selected) is the suspect, the chances that the eyewitness will identify that person are increased (Haw & Fisher, 2004; Phillips, McAuliff, Kovera, & Cutler, 1999). Furthermore, when the eyewitness selects the person whom the lineup administrator was led to believe is the target, the eyewitness expresses higher levels of confidence in the identification (Garrioch & Brimacombe, 2001).

The idea of the double-blind lineup is straightforward: The person who administers the lineup should not be aware of which lineup member is the suspect and which members are fillers

(Wells et al., 1998). This recommendation does not presume any intention or awareness on the part of the lineup administrator to influence the eyewitness. Some police jurisdictions might be concerned about manpower issues involved in using an independent lineup administrator. Because most lineups in the United States are actually photo spreads of some sort rather than live lineups, an alternative to using a double-blind administrator is to have a laptop computer administer the lineup, thereby effectively eliminating any possible influence from the lineup administrator (for a description of such a program, see MacLin, Zimmerman, & Malpass, 2005).

Sequential Lineups. An alternative to the traditional police lineup, the sequential lineup, was introduced in the mid-1980s (Lindsay & Wells, 1985). Unlike the traditional police lineup, in which all members are presented to the eyewitness at once (simultaneous lineup), the sequential lineup presents the lineup members to the eyewitness one at a time. The eyewitness is told that he or she will view a number of people—the number is not specified. The witness makes a decision on each lineup member (yes, no, or not sure) before the next lineup member appears. The theory behind the sequential lineup is that it prevents eyewitnesses from relying on relative judgments, in which one lineup member is compared with another and the one most similar to the target is picked. Although the eyewitness can compare the lineup member currently being viewed with those already seen, there is a chance that a lineup member yet to come might look even more similar to the target. The initial results indicated support for a sequential-superiority effect in which identifications from target-absent lineups diminished while identifications of the target from target-present lineups remained largely the same.

Years of additional experiments culminated in a meta-analysis that aggregated data across 4,145 participant witnesses (Stebly et al., 2001). The meta-analysis supported the original observation of lower mistaken identification rates for the sequential than for the simultaneous lineup; however, there was also a reduction in accurate identifications of the target from the target-present lineups. In general, the sequential procedure appears to result in fewer identification attempts overall compared with the simultaneous procedure. Although the sequential procedure reduced mistaken identifications at a greater rate than it did accurate identifications, this shift in performance is consistent with a criterion shift in which eyewitnesses set a higher criterion for identification with the sequential than with the simultaneous procedure (Meissner, Tredoux, Parker, & MacLin, 2005). However, these results are also consistent with a shift away from relative judgments.

Recall that the RWR effect indicates that some proportion of accurate identifications appears to result from relative judgments rather than true recognition. Thus, a shift away from relative judgments is likely to result in fewer accurate identifications as well as fewer mistaken identifications. An argument

can be made that a more conservative lineup test (whether owing to a higher criterion for making a positive identification or to a reduced reliance on relative judgments) is desirable, as mistaken identification is the primary cause of convictions of the innocent. The trade-off of accurate and mistaken identifications ultimately is a decision for policymakers, not scientists. However, Steblay et al. (2001) and Penrod (2003) argue that any losses of accurate identifications that result from reduced reliance on relative judgments are merely reductions in lucky or calculated guesses.

A recent field experiment involving actual lineups conducted in Illinois (Illinois Pilot Program, 2006) has been touted as a comparison of the sequential lineup and the traditional simultaneous lineup. The authors' report on the experiment interprets its results as indicating that the traditional simultaneous lineups yielded fewer filler identifications and more suspect identifications than did the sequential lineups. In fact, however, this two-condition experiment actually confounded several variables. Perhaps the most important confound was that the simultaneous lineups were never conducted using double-blind procedures but were always conducted by the case detectives. The sequential lineups, in contrast, were always conducted using the double-blind method. Thus, the low filler rate obtained in the simultaneous lineups could have been the result of not using double-blind procedures. Consistent with this concern, it should be noted that the double-blind sequential-lineup data in the Illinois Pilot Program conformed quite well with data obtained using the double-blind sequential procedure in the Hennepin County (Minnesota) pilot project (about 8% filler identification rates; see Klobuchar, Steblay, & Caligiuri, in press). In contrast, the very low filler rate reported in the Illinois Pilot Program using the nonblind simultaneous procedure (about 3%) is an extreme outlier from the approximately 20% rate found in other jurisdictions with simultaneous lineups (see Behrman & Davey, 2001; Slater, 1994; Valentine et al., 2003; Wright & McDaid, 1996). The profoundly low filler-identification rate for simultaneous lineups reported in the Illinois Pilot Program suggests a suppression of filler identifications and/or a reluctance to report filler identifications by the nonblind lineup administrators. Thus, we are reluctant at this time to consider the Illinois Pilot Program to be an interpretable test of the simultaneous versus sequential procedure.

Composites

When there is no clear suspect, investigators sometimes resort to the use of sketch artists or composite faces. Little systematic research on sketch artists exists, in part because variance across artists (e.g., in their abilities) is presumed to be significant and a fairly large sample would be required to reach generalizable conclusions. Considerable research exists, however, on composite production systems, which are increasingly being used by crime investigators in place of sketch artists. Composite production systems create faces by selecting features (e.g., nose,

eyes, chin, head shape, hair, mouth, brows, ears) and combining them into a face. One of the original systems, *Identi-Kit*, used line drawings of facial features on transparencies. An accompanying booklet displayed all the possible features, and the eyewitness selected features that were then overlaid on each other to form a complete face. A later system, *Photo-Fit*, used the same system, except that the features were black-and-white photos of actual facial features instead of line drawings.

In recent years, computer software programs have replaced transparency-based composite systems. Examples of such software are *E-Fit*, *Evo-FIT*, *CD-Fit*, and *Mac a Mug* (Frowd et al., 2005). The *FACES* program is currently popular among U.S. law enforcement agencies (Cote, 1998). *FACES* includes 361 hair selections, 63 head shapes, 42 forehead lines, 410 sets of eyebrows, 514 sets of eyes, 593 noses, 561 sets of lips, 416 jaw shapes, 145 moustaches, 152 beards, 33 goatees, 127 sets of eyeglasses, 70 eye lines, 147 smile lines, 50 mouth lines, and 40 chin lines. In each feature category, a selection button permits the user to view subsets of the feature that meet a particular description. For instance, eyes are divided into the subsets narrow, deep set, overhanging lids, heavy lids, average blue or green, almond-shaped blue or green, average brown, almond-shaped brown, and bulging. Noses are divided into the subsets of narrow, average with round base, average with broad base, average pointed, hooked nostrils not showing, hooked nostrils showing, slightly flared nostrils, very flared nostrils, round (bulbous), average large, wide base with nostrils showing, and wide base with nostrils not showing. In addition, controls permit the features to be moved up or down and closer or farther apart, and to be made larger or smaller. The features are displayed on one side of the computer screen, and the face is built on the other side. When a feature is clicked, it appears on the face. To make changes—for example, in the eyes—one simply clicks a different set of eyes, and those on the face are replaced with the new ones.

All composite systems use a part-to-whole method to build the face: The eyewitness constructs a face by selecting features and assembling them. Numerous face-recognition researchers have noted that this method may conflict with the natural way faces are encoded in memory—namely, in a holistic manner (e.g., Tanaka & Farah, 1993; Tanaka & Sengco, 1997; Wells & Hryciw, 1984). Research experiments generally indicate that composite faces tend to be rather poor likenesses of the original faces (e.g., Bruce, Ness, Hancock, Newman, & Rarity, 2002; Ellis, Davies, & Shephard, 1978; Kovera, Penrod, Pappas, & Thill, 1997). The research by Kovera et al. illustrates the difficulty of generating a composite that resembles the intended target. The researchers used a set of 50 composite images of the faces of high-school classmates and faculty created by former students. Other graduates of the same schools judged the composites' quality. The judges were told that some of the composites were of former high-school classmates; they were asked to identify them, rating the faces' familiarity and their own confidence in that

assessment and, where possible, giving names. Ratings of familiarity and confidence did not differentiate significantly between the known and unknown faces, and only 3 of the 167 names offered for the composites proved to be correct! Ratings by the composite constructors of their familiarity with the targets and their assessments of the quality of their composites were unrelated to identification accuracy on any measure. The researchers concluded that "the findings . . . raise doubts about the likelihood that composites prepared under field conditions will yield a pinpointed identification of a perpetrator by individuals who know the perpetrator" (Kovera et al., 1997, p. 245).

Although early research using the Identi-Kit and Photo-Fit suggested that the poor likenesses might be due to the composite systems themselves (e.g., too few choices of features; Ellis et al., 1978), there is an emerging consensus that people simply do not have good memories for isolated facial features and that any system that requires parts-to-whole-face recall will be severely limited. Furthermore, research suggests that having eyewitnesses build a composite face can damage memory for the original face and make the witnesses less able to recognize the original target face in a later lineup (Wells, Charman, & Olson, 2005). Similar effects have been observed for giving verbal descriptions of faces, a phenomenon called the *verbal overshadowing effect* (originally demonstrated by Schooler & Engstler-Schooler, 1990; and see meta-analysis by Meissner & Brigham, 2001b).

Recent research has produced some encouraging results for cases in which multiple eyewitnesses independently produce composites. In such cases, morphing the individual composites produces a new face that is a better likeness of the person than is any individual composite (Bruce et al., 2002; Hasel & Wells, in press). But even the morph of four individual composites does not produce a dramatic likeness of the original face. Hasel and Wells reported that the ability to pick the original target from sets of four alternative faces was 35% for individual composites and 48% for four-composite morphs (chance = 25%).

POSTDICTION VARIABLES

Postdiction variables are neither system nor estimator variables in the traditional sense, because they are not presumed to causally affect the accuracy of eyewitnesses. These variables are measurable products that correlate with the accuracy of eyewitnesses in a noncausal manner. The most researched of these is the confidence (certainty) of the eyewitness. Another postdiction variable is response latency—specifically, how long the eyewitness takes to make an identification. The third postdiction variable that we review here is self-reported decision process.

Confidence

The confidence an eyewitness expresses in his or her identification is one of the most researched questions in the study of

eyewitnesses. First, there is a strong intuitive appeal to the idea that confidence and accuracy should be closely related. Second, courts have explicitly endorsed the idea that the reliability of an eyewitness should be gauged at least in part by the person's confidence, a tenet advocated by the U.S. Supreme Court (*Manson v. Braithwaite*, 1977). Third, even in the absence of instructions to pay attention to eyewitness confidence, participant jurors rely heavily on the confidence of the eyewitness in deciding whether he or she made an accurate identification (e.g., Bradfield & Wells, 2000; Fox & Walters, 1986; Lindsay et al., 1986; Lindsay et al., 1989; Lindsay et al., 1981; Wells, Ferguson, & Lindsay, 1981; Wells et al., 1979).

Initially, eyewitness researchers focused on the relationship between eyewitness-identification confidence and eyewitness-identification accuracy (Wells & Murray, 1984). This was a useful starting point, but it is now clear that the relationship between confidence and accuracy varies greatly as a function of many other factors. For instance, it depends, in part, on how similar the mistakenly identified person is to the actual target (Lindsay, 1986). The confidence-accuracy relationship is generally higher when memory strength is stronger rather than weaker (Deffenbacher, 1980); when it is calculated only among those who make an identification rather than among both those who make an identification and those who do not (Sporer, Penrod, Read, & Cutler, 1995); and when it is calculated across witnesses under different viewing conditions rather than among witnesses who had the same viewing conditions (Read, Vokey, & Hammersley, 1990).

In their meta-analysis of 30 studies involving a total of 4,036 participant witnesses, Sporer et al. (1995) estimated that the confidence-accuracy correlation among choosers could be as high as +.41. Wells, Olson, & Charman (2002) note that a .41 point-biserial correlation (a correlation between a two-level variable and a continuous variable) between confidence and accuracy in eyewitness identification is less than the point-biserial correlation between height and gender in humans. Nevertheless, under conditions of uncertainty, a postdiction variable that has a .41 correlation to a criterion variable is not something that should be ignored. In fact, the American Psychology-Law Society's white paper on lineups endorses the idea of making a clear record of the confidence of an eyewitness that triers-of-fact might later use (Wells et al., 1998).

Accuracy of Highly Confident Witnesses

Though confidence-accuracy correlations are sometimes relatively high, most research yields relatively low correlations. Attempts have been made to increase the correlation through accountability, context reinstatement, and other thought manipulations, but none has been successful, and such measures commonly have the reverse effect of harming the confidence-accuracy relationship (Robinson & Johnson, 1998). Some have argued that despite the generally weak confidence-accuracy correlation, accuracy may be very high among the most confi-

dent witnesses. One analytic method that addresses this question uses calibration methods that measure peoples' confidence on a percentage scale (zero, 10%, 20%, 30%, and so on) and then clumps people together at different levels of confidence to assess their accuracy (see Brewer, Keast, & Rishworth, 2002; Brewer, Weber, & Semmler, 2005; Brewer & Wells, 2006; Cutler & Penrod, 1989; Juslin, Olsson, & Winman, 1996; Weber & Brewer, 2003, 2004).

Cutler and Penrod found witness overconfidence of 10 to 20% (that is, witnesses were making 10%–20% more errors than their confidence levels indicated). Juslin et al. (1996) found that confidence scores were roughly comparable to accuracy scores; in particular, in a 95% confidence group, judgments were 85 to 90% accurate (the exact numbers are not reported—numbers are estimated from figures). Although these numbers look promising, even in the 95% confidence group there appear to be 10 to 15% errors; errors are much higher—with greater overconfidence—at lower confidence levels.

Other researchers have found less promising results. Though the published numbers are slightly ambiguous, it appears that the top 21% most confident witnesses in Brigham, Maas, Snyder, and Spaulding (1982) were 85% correct. Brewer et al. (2002) found that eyewitnesses who were very confident in the accuracy of their identifications (95% certain) were about 70 to 75% correct—that is, high error rates and substantial overconfidence. In a 1987 study by Fleet, Brigham, and Bothwell, 75% of subjects who rated themselves as extremely confident were accurate. Brigham (1990) found a 74% accuracy rate for the top 27% most confident witnesses. Bornstein and Zickafoose (1999) reported that they found overconfidence in both general-knowledge domains and eyewitness-memory domains and that the two were correlated. The latter finding suggests that confidence has an individual-difference component that can be independent of the task. Research by Perfect and Hollins (1996) suggests that poor confidence–accuracy relationships are at least partly attributable to people's lack of insight regarding their general abilities in the eyewitness domain.

The general point is that these results are consistent with other measures of the confidence–accuracy relationship. Even the calibration approach does not uniformly support the notion that confidence is a highly reliable indicator of accuracy. Error rates can be high among even the most confident witnesses. Furthermore, these numbers presume that the criminal justice system would skim off only the most confident witnesses and that none of those witnesses would have had their confidence artificially boosted.

The Problem Grows Worse

Imagine that prosecutors are skimming only the most confident witnesses; there is no artificial confidence-boosting among the witnesses; and we have reliable measures of confidence, not the vague verbal reports currently obtained by police. Among these highly confident witnesses, the results above indicate that 20 to

30% could be in error. But even if the error rate is only 10% for these highly selected and most confident witnesses, they will all appear highly confident to jurors—so confidence cannot help the jurors figure out which witnesses have made errors. Indeed, the simple correlation between confidence and accuracy for these witnesses will be much worse than among all witnesses, because there is very little variability in confidence and maybe no useful variance. Though it is tempting to conclude that jurors might be entitled to assume a fairly high base rate of accuracy among these highly confident witnesses (even if confidence cannot aid them in differentiating accurate and inaccurate witnesses), the pleading effect discussed earlier suggests that it would not be safe to conclude that the accuracy rate is fairly high; indeed, the accuracy rate could be fairly low, because the guilty defendants facing confident witnesses have already pleaded guilty. In short, the research results and logic call into question the notion that witness confidence can be of significant assistance to jurors.

Even if the research showed that eyewitness-identification confidence and accuracy are related at a level that could have practical utility, this conclusion would come with another huge caveat. Wells and Bradfield (1998) showed that giving confirming feedback to eyewitnesses who had made mistaken identifications (e.g., “Good, you identified the suspect”) produces profound distortions in their retrospective judgments, including their recollections of how confident they were when they made their identification, how good a view they had when they witnessed the event, and how much attention they devoted to the target's face during the event.

The idea that eyewitness confidence can be driven by variables that are independent of accuracy has theoretical roots in Leippe's (1980) early analysis of the problem, but the fact that other testimony-relevant variables (such as self-reports of attention and view) are also malleable is a startling revelation. There are numerous replications of this phenomenon, known as the *post-identification feedback effect* (Bradfield, Wells, & Olson, 2002; Dixon & Memon, 2005; Hafstad, Memon, & Logie, 2004; Neuschatz et al., 2005; Semmler, Brewer, & Wells, 2004; Wells & Bradfield, 1998, 1999a; Wells, Olson, & Charman, 2003; also see a meta-analysis by Douglass and Steblay, in press). The post-identification feedback effect occurs even if the feedback is delayed for 48 hours (Wells et al., 2003). The effect occurs for both positive identifications and “not there” decisions (Semmler et al., 2004), and the effect occurs for both the elderly (Neuschatz et al., 2005) and young children (Hafstad et al., 2004). Importantly, the confidence-inflating effect of confirming feedback is greater for eyewitnesses who have made a mistaken identification than for those who have made an accurate identification; as a result, confirmatory post-identification feedback harms the accuracy–confidence relationship (Bradfield et al., 2002). Furthermore, a recent experiment showed that the post-identification feedback effect occurs for actual eyewitnesses to real crimes (Wright & Skagerberg, in press).

The post-identification feedback effect is of considerable practical import, because it is a common practice for lineup administrators to give eyewitnesses feedback about their identifications. When an eyewitness has received some form of feedback before being asked about his or her confidence in the identification, the confidence statement is contaminated. Eyewitnesses tend to believe that the feedback did not affect them; however, those who report that the feedback did not affect their response to the retrospective confidence question are nevertheless affected just as much as are the smaller portion of witnesses who report that it might have affected them (Wells & Bradfield, 1998). Fortunately, if the eyewitness is asked to indicate his or her confidence level before receiving feedback, this tends to inoculate the eyewitness against post-identification feedback effects (Wells & Bradfield, 1999a). The need for immediate measures of confidence is further indicated by the fact that repeated questioning, expenditure of effort over time, and public displays of confidence (as might happen at a trial) all tend to inflate eyewitness confidence even when accuracy is held constant (Shaw & McClure, 1996; Shaw & Zerr, 2003; Shaw, Zerr, & Woythaler, 2001). Clearly, the most pristine measure of witness confidence is one collected from the witness at the time of identification and before the contaminating influence of these later events.

An intriguing phenomenon that appears to be related to the post-identification feedback effect is *visual hindsight bias*. Harley, Carlsen, and Loftus (2004) presented participants with photographs of familiar faces that were severely degraded (blurred) but gradually resolved to full clarity. After the identity of the face became apparent, participants predicted the level of blur that would permit a naïve observer to identify the face. Participants who had already learned the identity of the face consistently predicted that a naïve participant would be able to identify the face at levels of blur that were in fact too severe for identification. Thus, once the "correct" answer is known, people think that objectively poor viewing conditions are nevertheless sufficient for accurate identification. This "saw it all along" effect could be an important component of the propensity for eyewitnesses to have retrospective overconfidence in their identifications.

Response Latency

Another interesting postdictor of eyewitness accuracy is the *response latency* of the eyewitness in making a lineup identification. We use "response latency" rather than "decision time," because the former term incorporates both decisional and motor components (Weber, Brewer, Wells, Semmler, & Kest, 2004). The effect was first documented by Sporer (1992); considerable data have accumulated showing that witnesses who make accurate identifications from lineups do so faster than do those who make inaccurate identifications (Dunning & Perretta, 2002; Dunning & Stern, 1994; Smith, Lindsay, & Pryke, 2000; Smith, Lindsay, Pryke, & Dysart, 2001; Sporer, 1993, 1994; Weber

et al., 2004). Sporer (1992) suggested that this occurs because comparisons made to the target involve a large number of common features between memory and the stimulus face, thereby permitting a very fast decision in recognizing the target. Comparisons to an innocent lineup member, on the other hand, involve fewer common features between memory and the stimulus, thereby resulting in a slower decision. The potential practical value of the negative relation between response latency and identification accuracy is considerable because, unlike confidence, response latency is a performance variable rather than a self-report. And, unlike confidence, response latency can be measured without the eyewitness's awareness. Furthermore, response latency and confidence are not fully redundant postdictors of accuracy (Smith et al., 2001; Weber et al., 2004).

For response latency to be useful at the level of evaluating an individual eyewitness, however, some criteria have to be set for "fast" and "slow." How are police, prosecutors, judges, and juries to know whether a given result (e.g., response latency of 20 seconds) was fast or slow and thus should be considered accurate or inaccurate? Dunning and Perretta (2002) approached this problem by repeatedly selecting different response latencies, examining the percentages correct above and below each response latency, and calculating the obtained chi-square values for each response latency. The response latency that produced the greatest value was then considered to be the best rule for deciding on the decision criterion. Using this approach, Dunning and Perretta found that a response latency of 10 to 12 seconds worked best across four different data sets. Furthermore, the 10–12-second response latency was highly discriminating—those who responded before the 10–12-second latency had a probability of accuracy of nearly 90%, while those who took longer than 10–12 seconds had a probability of accuracy of approximately 50%. Dunning and Perretta called this the "10–12 second rule." The consistency of the 10–12-second response latency data sets fits nicely with Dunning and Stern's (1994) notion of automatic versus deliberative processing in eyewitness identification. They argued that automatic decision processes (which are fast) are likely to be characteristic of accurate eyewitnesses, while deliberative processes (which are slower) ought to be more characteristic of inaccurate eyewitnesses. Furthermore, because automatic processes tend to be uninfluenced by decision context, the speed of accurate identifications ought to be relatively stable across situations—hence, the 10–12-second rule was proposed to be stable across various circumstances and conditions.

More recent research, however, has shown that the 10–12-second rule is not stable across variations in witnessing and lineup conditions. Weber et al. (2004) found that the maximally discriminating time ranged from 5 seconds to 29 seconds across variations in conditions. Furthermore, eyewitnesses who responded faster than the optimal time boundaries did not show particularly high probabilities of being accurate; they were often

in the 50 to 60% range rather than the 90% range found by Dunning and Perretta (2002). Although the 10–12-second rule does not appear to be stable, the fact that accurate identifications are made faster than inaccurate identifications is itself a very reliable finding.

Self-Reported Decision Processes

Another potential postdictor of eyewitness-identification accuracy is eyewitnesses' reports of the processes they use to make their identification decisions. Wells (1984) argued that mistaken identifications tend to arise from making relative judgments in which the eyewitness compares one lineup member to another to decide who looks most like the target; Wells argued that an absolute judgment (comparing the lineup member to memory) would be more likely to be accurate. Consistent with this assumption, Stern and Dunning (1994) found that eyewitnesses who agreed with the statement "I compared the photos [in the lineup] to each other to narrow the choices" were more likely to have made a mistaken identification than were those who endorsed the statement "I just recognized him, I cannot explain why" or those who said the photo "popped out." Similar results have been reported by Smith et al. (2000), Smith et al. (2001), Dunning and Stern (1994), and Lindsay and Bellinger (1999).

One of the problems with self-reported decision processes is that, like eyewitness confidence, they are subject to distortion. For instance, confirmatory post-identification feedback leads eyewitnesses to be more likely to recall that the lineup photo "popped out" and less likely to report having made a relative judgment (Wells & Bradfield, 1998). Furthermore, if eyewitnesses thought these kinds of self-reports would be used to assess the likely accuracy of their identifications, they might shape their answers accordingly.

Overall, it appears that postdiction has not been highly successful for eyewitness identification. Indicators of confidence measured at the time of the identification may have some diagnostic value with regard to accuracy, but feedback, prosecutorial skimming, and plea bargaining can operate to obliterate the diagnostic value of confidence. This underscores the primary message of the system-variable approach—namely, that it would be better to use procedures that help prevent mistaken identifications from occurring in the first place than to try to detect errors after the fact.

PROGRESS AND PROSPECTS

Eyewitness science has made considerable progress in recent years in getting a number of jurisdictions in the United States to improve their identification procedures and undertake training in the cognitive interview. The state of New Jersey, for instance, has adopted an entire package of reforms for how it conducts lineups. These reforms are based explicitly on the eyewitness literature and include the adoption of recommendations for

selecting lineup fillers, instructing eyewitnesses before the lineup, using double-blind lineup administrators, using the sequential procedure, and obtaining a confidence statement from the eyewitness before external factors can influence the person's confidence. Other jurisdictions—including the states of Wisconsin and North Carolina and the cities of Boston and Minneapolis—have also adopted these reforms. In each of these jurisdictions, eyewitness scientists played a central role in explaining the literature and helping translate the findings into practical reforms of eyewitness-identification procedures.

In many jurisdictions, eyewitness researchers have become involved in training police investigators in eyewitness-identification procedures or training the trainers. Increasingly, eyewitness researchers are targeting some of their writings toward law enforcement journals to more directly make the research findings accessible to law enforcement (e.g., Turtle, Lindsay, & Wells, 2003). Jury simulations have shown that mock jurors respond more favorably to eyewitness-identification testimony when it was obtained using these packages of reformed procedures than when procedures deviate from these reforms (Lampinen, Judges, Odegard, & Hamilton, 2005). This is an unusual impact for a laboratory-based psychological science. In the years ahead, it is expected that these reforms will become even more widespread and the role of scientific psychology more deeply ingrained in the legal system.

Despite this progress, we believe that research has only scratched the surface of ways to help the legal system improve the accuracy of eyewitness accounts. Thus far, almost all improvements to lineup procedure have been designed to reduce the chances that an innocent suspect will be identified without reducing identifications of the target. It has been more difficult to discover ways to increase the chances that the eyewitness will identify the target in target-present lineups. Both research experiments and archival analyses of actual lineups suggest that eyewitnesses fail to identify the target about 50% of the time. This does not necessarily mean that the target walks away; in some cases, other evidence is sufficient to charge or convict the person. Nevertheless, there is room to improve these hit rates. It seems likely that some failures to identify the target from target-present lineups are due at least in part to changes in the target's appearance. Specifically, the appearance of the target when the eyewitness viewed the crime represents a moment in time. The photo seen in a photographic lineup may be older or more recent. Attempts to use pre-lineup instructions that warn the eyewitness that the target's appearance might have changed have not proved successful in increasing accuracy; in fact, they seem to increase errors (Charman & Wells, *in press*).

It could be argued that research has been profoundly conservative in its approach to the eyewitness-identification problem. Specifically, researchers have tended to operate within the confines of the traditional lineup, in which a suspect is placed among fillers and the eyewitness makes a verbal identification. But what if the lineup had never existed and the legal system

turned to psychology to determine how information could be extracted from eyewitnesses' memories? Specific methods for obtaining detailed reports from witnesses—such as the cognitive interview—do not appear to aid identification, but the quality of witness descriptions could be improved through innovative questioning procedures. This is an area in which research is sparse, despite the potential to study the effectiveness of various types of retrieval cues in eliciting descriptions (Sporer, in press). The focus on target identification has also resulted in research that has selectively focused on the impact of a specific system or estimator variable on lineup performance, instead of exploring relevant interactions. For example, is the weapon-focus effect more pronounced when a witness has a shorter exposure to the target, when the retention interval is longer, and when the witness is making a cross-race identification? Operating from scratch, it seems likely that modern psychology would have developed radically different ideas. For instance, brain-activity measures, eye movements, rapid displays of faces, reaction times, and other methods for studying memory might have been developed instead of the traditional lineup. Once we step outside the confines of the traditional lineup, it is possible to imagine a future science of eyewitness evidence that is radically different from the methods used today.

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EYEWITNESS TESTIMONY

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■ **Abstract** The criminal justice system relies heavily on eyewitness identification for investigating and prosecuting crimes. Psychology has built the only scientific literature on eyewitness identification and has warned the justice system of problems with eyewitness identification evidence. Recent DNA exoneration cases have corroborated the warnings of eyewitness identification researchers by showing that mistaken eyewitness identification was the largest single factor contributing to the conviction of these innocent people. We review major developments in the experimental literature concerning the way that various factors relate to the accuracy of eyewitness identification. These factors include characteristics of the witness, characteristics of the witnessed event, characteristics of testimony, lineup content, lineup instructions, and methods of testing. Problems with the literature are noted with respect to both the relative paucity of theory and the scarcity of base-rate information from actual cases.

CONTENTS

COVERAGE OF THIS REVIEW	278
BASIC CONCEPTS	278
ESTIMATOR VARIABLES	280
Characteristics of the Witness	280
Characteristics of the Event	281
Characteristics of Testimony	283
Lay Observers' Judgments of Accuracy	284
SYSTEM VARIABLES	285
Culprit-present Versus Culprit-absent Lineups	286
Instructions	286
Lineup Content	287
Lineup Presentation Method	288
Behavioral Influence: The Need for Double-Blind Testing	289
Base Rates as System Variables	289
PROBLEMS AND PROSPECTS	290

Eyewitnesses are critical in solving crimes, and sometimes eyewitness testimony is the only evidence available for determining the identity of the culprit. Psychological researchers who began programs in the 1970s, however, have consistently

articulated concerns about the accuracy of eyewitness identification. Using various methodologies, such as filmed events and live staged crimes, eyewitness researchers have noted that mistaken identification rates can be surprisingly high and that eyewitnesses often express certainty when they mistakenly select someone from a lineup. Although their findings were quite compelling to the researchers themselves, it was not until the late 1990s that criminal justice personnel began taking the research seriously. This change in attitude about the psychological literature on eyewitness identification arose primarily from the development of forensic DNA tests in the 1990s. More than 100 people who were convicted prior to the advent of forensic DNA have now been exonerated by DNA tests, and more than 75% of these people were victims of mistaken eyewitness identification (Wells et al. 1998, Scheck et al. 2000). The apparent prescience of the psychological literature regarding problems with eyewitness identification has created a rising prominence of eyewitness identification research in the criminal justice system (Wells et al. 2000).

Because most crimes do not include DNA-rich biological traces, reliance on eyewitness identification for solving crimes has not been significantly diminished by the development of forensic DNA tests. Interestingly, research on eyewitness reliability has been done only by psychologists—primarily cognitive and social psychologists—and the psychological literature represents the only source of empirical data on eyewitness identification. The vast criminal justice system itself has never conducted an experiment on eyewitness identification.

COVERAGE OF THIS REVIEW

No review of the eyewitness identification literature has previously appeared in the *Annual Review of Psychology*. Therefore, we include here references to articles from the 1970s and 1980s that we think especially critical to the development of the literature, but we primarily emphasize more recent developments. Also, because the eyewitness identification literature has become so vast, we are necessarily selective in our citations and coverage. Readers should note that this review focuses on eyewitness identification rather than on eyewitness testimony in general. Eyewitnesses commonly testify about many things, such as which hand a gunman used, the color of a car, or recollections of a conversation, but these event memories are outside the scope of this review. The large literature on child eyewitnesses, suggestibility, and recovery of repressed memories is not reviewed here.

BASIC CONCEPTS

The eyewitness identification literature has developed a number of definitions and concepts that require explanation. A *lineup* is a procedure in which a criminal suspect (or a picture of the suspect) is placed among other people (or pictures of other people) and shown to an eyewitness to see if the witness will identify the

suspect as the culprit in question. The term suspect should not be confused with the term culprit. A *suspect* might or might not be the *culprit* (a suspect is suspected of being the culprit). *Fillers* are people in the lineup who are not suspects. Fillers, sometimes called *foils* or *distractors*, are known-innocent members of the lineup. Therefore, the identification of a filler would not result in charges being brought against the filler. A *culprit-absent* lineup is one in which an innocent suspect is embedded among fillers and a *culprit-present* lineup is one in which a guilty suspect (culprit) is embedded among fillers. The primary literature sometimes calls these *target-present* and *target-absent* lineups.

A *simultaneous* lineup is one in which all lineup members are presented to the eyewitness at once and is the most common lineup procedure in use by law enforcement. A *sequential* lineup, on the other hand, is one in which the witness is shown only one person at a time but with the expectation that there are several lineup members to be shown.

A lineup's *functional size* is the number of lineup members who are "viable" choices for the eyewitness. For example, if the eyewitness described the culprit as being a tall male with dark hair and the suspect is the only lineup member who is tall with dark hair, then the lineup's functional size would be 1.0 even if there were 10 fillers. Functional size was introduced as a specific measure (Wells et al. 1979), and competing measures have been proposed, such as Malpass's (1981) "effective size." Today functional size is used generically to mean the number of lineup members who fit the eyewitness's description of the culprit.

Mock witnesses are people who did not actually witness the crime but are asked to pick a person from the lineup based on the eyewitness's verbal description of the culprit. Mock witnesses are used to test the functional size of the lineup.

The *diagnosticity* of suspect identification is the ratio of accurate identification rate with a culprit-present lineup to the inaccurate identification rate with a culprit-absent lineup. The *diagnosticity of "not there"* is the ratio of "not there" response rates with culprit-absent lineups to "not there" response rates with culprit-present lineups. The *diagnosticity of filler identifications* is the ratio of filler identification rates with culprit-absent lineups to filler identification rates with culprit-present lineups.

Among variables that affect eyewitness identification accuracy, a *system variable* is one that is (or could be) under control of the criminal justice system, while an *estimator variable* is one that is not. System variables include instructions given to eyewitnesses prior to viewing a lineup and the functional size of a lineup. Estimator variables include lighting conditions at the time of witnessing and whether the witness and culprit are of the same or of different races.

The distinction between estimator and system variables has assumed great significance in the eyewitness identification literature since it was introduced in the late 1970s (Wells 1978). In large part, the prominence of this distinction attests to the applied nature of the eyewitness identification literature. Whereas the development of a literature on estimator variables permits some degree of postdiction that might be useful for assessing the chances of mistaken identification after the

fact, the development of a system variable literature permits specification of how eyewitness identification errors might be prevented in the first place.

ESTIMATOR VARIABLES

Estimator variables can be sorted into four broad categories: characteristics of the witness, characteristics of the event, characteristics of the testimony, and abilities of the testimony evaluators to discriminate between accurate and inaccurate witness testimony.

Characteristics of the Witness

Are members of certain groups better eyewitnesses than those of others? The empirical evidence is not overwhelming. For example, there is no clear evidence that males and females differ significantly overall in ability to identify people from lineups. A meta-analysis by Shapiro & Penrod (1986) indicated that females might be slightly more likely to make accurate identifications but also slightly more likely to make mistaken identifications than are males (due to females being more likely to attempt an identification), thereby yielding an overall equivalent diagnosticity for males and females. Although males and females might take an interest in different aspects of a scene and thereby remember somewhat different details (e.g., Powers et al. 1979), overall abilities of males and females in eyewitness identification appear to be largely indistinguishable (but see Brigham & Barkowitz 1978, Shaw & Skolnick 1999).

The age of the eyewitness, on the other hand, has been consistently linked to eyewitness identification performance, with very young children and the elderly performing significantly worse than younger adults. The eyewitness identification errors of young children and the elderly are highly patterned: When the lineup contains the actual culprit, young children and the elderly perform nearly as well as young adults in identifying the culprit, but when the lineup does not contain the culprit the young children and the elderly commit mistaken identifications at a higher rate than do young adults (see the meta-analysis on children versus adults by Pozzulo & Lindsay 1998).

There is little evidence that intelligence is related to eyewitness identification performance. Although an early study by Howells (1938) indicated a significant relation between face recognition accuracy and intelligence, later studies have shown no relation (e.g., Brown et al. 1977). A word of caution is in order here, however, because Howells's sample of witnesses included a much greater range of intelligence at the low end than have later studies. At the low extremes of intelligence, a pattern similar to that found with children seems likely, namely a high rate of mistaken identifications in response to culprit-absent lineups.

The race of the eyewitness has been examined extensively. Although no consistent overall differences attributable to race have emerged, the evidence is now quite clear that people are better able to recognize faces of their own race or

ethnic group than faces of another race or ethnic group. A recent meta-analysis by Meissner & Brigham (2001) shows that this effect is robust across more than 25 years of research.

Little published research relates personality characteristics to eyewitness identification accuracy. Hosch et al. (1984) found that high self-monitors (individuals who adapt their behavior to cues regarding what is socially appropriate) are more susceptible to biased lineup procedures than are low self-monitors, and Hosch & Platz (1984) found a relation between self-monitoring and correct identifications. Also, a meta-analysis by Shapiro & Penrod (1986) indicated that individuals high in chronic trait anxiety (a general attitude of apprehension) made fewer mistaken identifications than individuals low in chronic trait anxiety. Their meta-analysis also indicated that field independents (those with a perceptual tendency to differentiate parts of a visual field from the whole) made fewer accurate identifications (but equal mistaken identifications) than did field dependents. However, little research has been directed at the role of personality in eyewitness identification, and no strong theory relating personality to eyewitness identification has emerged.

Characteristics of the Event

A variety of factors affect the ability of an eyewitness to identify the culprit at a later time, including the amount of time the culprit is in view, the lighting conditions, whether the culprit wears a disguise, the distinctiveness of the culprit's appearance, the presence or absence of a weapon, and the timing of knowledge that one is witnessing a crime.

Distinctive faces are much more likely to be accurately recognized than nondistinctive faces (e.g., Light et al. 1979). Faces that are highly attractive or highly unattractive are easier to recognize than are faces that are average in attractiveness (e.g., Fleishman et al. 1976), but what makes a face distinctive is not entirely clear. Because the arithmetic mean (averaged at the pixel level) of several faces (a prototype) is judged to be more attractive than the individual faces that were averaged (see Langois & Roggman 1990), the distinctiveness-recognition relation is probably not due to a simple deviation from the arithmetic mean of individual facial features.

Simple disguises, even those as minor as covering the hair, result in significant impairment of eyewitness identification (Cutler et al. 1987). Sunglasses also impair identification, although the degree of impairment can be reduced by having the targets wear sunglasses at the time of the recognition test (Hockley et al. 1999). Photos of criminal suspects used in police lineups are sometimes several years old. Changes in appearance that occur naturally over time and changes that are made intentionally by suspects can have quite strong effects on recognition. Read et al. (1990) found that photos of the same people taken two years apart were less likely to be recognized as the same people when their appearance had naturally changed (via aging, facial hair) than when their appearance had remained largely the same.

Clearly, at the extreme of low light levels there is a point at which a face cannot be perceived well enough to be recognized later. Surprisingly, however, we know of no experiments that have measured the light levels required for the encoding of faces. We encourage researchers to address this question.

As would be expected, the amount of time a culprit's face is in view affects the chances that the eyewitness can identify the person later (Ellis et al. 1977). However, this relationship depends less critically on the eyewitness's opportunity to view *per se* and more on the amount and type of attention that the witness directs at the culprit. Given equal exposure time to a face, people are more likely to be able to recognize that face later if they make abstract inferences about it (e.g., is this person honest?) than if they make physical judgments (e.g., does this person have a large or small nose?). Presumably, this effect occurs because the abstract inferences require holistic processing of the face whereas the physical judgments require feature processing (Wells & Hryciw 1984).

In general, the amount of time a culprit's face is in view is not as critical for eyewitness identification accuracy as the type or amount of attention given by the witness. For example, Leippe et al. (1978) exposed unsuspecting people to a staged theft of a package. Some were led to believe that the package contained a valuable item and some were led to believe that the package contained a trivial item. In addition, some learned of the value of the item in the package before the theft and some only learned the value after the thief had fled. Although all had the same opportunity to view the thief, the witnesses who knew the value of the item beforehand were significantly more accurate at identification than the other three groups. Observers often do not realize that they have witnessed a crime until after the culprit has fled. Although they might have had significant opportunity to view the culprit, they might have had little reason to attend closely.

One factor that can signal to eyewitnesses that a crime is occurring is the presence of a weapon. Unfortunately, learning that one is an eyewitness to a crime via the culprit's display of a weapon might not make the person a better eyewitness. A number of studies have been directed at the question of the so-called weapon-focus effect. A meta-analysis of these studies indicates that the presence of a weapon reduces the chances that the eyewitness can identify the holder of the weapon (Stebly 1992). Loftus et al. (1987) monitored eyewitnesses's eye movements and found that weapons draw visual attention away from other things such as the culprit's face. Complicating the issue somewhat is the fact that the presence of weapons or other types of threatening stimuli can cause arousal, fear, and emotional stress. The effects of such stress on memory are still being debated. Some research shows that increased levels of violence in filmed events reduces eyewitness identification accuracy (e.g., Clifford & Hollin 1981) whereas other research has failed to find this effect (e.g., Cutler et al. 1987). Deffenbacher (1983) suggested that the effect is likely to follow the Yerkes-Dodson Law where only very high and very low levels of arousal will impair memory. Christianson's (1992) review of the evidence relating emotional stress to memory suggests that emotional events receive preferential processing; emotional response causes a narrowing of attention (as suggested by Easterbrook 1959) with loss of peripheral details.

Characteristics of Testimony

Considerable interest and research have been directed at the question of whether there are characteristics of an eyewitness's testimony that could be used to postdict whether the witness made an accurate or false identification. The bulk of this research has focused on the certainty (confidence) of the eyewitness. Although early research suggested that the certainty an eyewitness expresses in an identification is largely unrelated to the accuracy of the identification, current analyses suggest a more hopeful but also more complex view of the certainty-accuracy relation. Although any given experiment might show a statistically nonsignificant relation between certainty and accuracy, meta-analyses of the literature show a reliable correlation. Several moderators of the strength of the relation have been identified. One important moderator is the overall accuracy of the eyewitnesses. When accuracy is low (e.g., from poor witnessing conditions), the certainty-accuracy relationship suffers (Bothwell et al. 1987). Later meta-analyses indicate that the certainty-accuracy relation is stronger if the analysis is restricted to those making an identification (choosers only) than if it also includes witnesses who make correct and false rejections (Sporer et al. 1995). In fact, using a weighted average of effect sizes for choosers only, Sporer et al. reported a 0.37 certainty-accuracy correlation across 30 studies. More recent work indicates that directing eyewitnesses to reflect on their encoding and test conditions or asking them to entertain hypotheses regarding why their identification might have been mistaken can improve the relation between accuracy and certainty, especially when this relation is calculated using calibration methods rather than the point-biserial correlation (Brewer et al. 2002).

Although the 0.37 correlation estimate for the certainty-accuracy relation is more optimistic than the early estimates, recent studies suggest the literature might be overestimating the utility of eyewitness certainty in actual cases. In a series of experiments, eyewitness certainty was shown to be highly malleable among eyewitnesses who had made mistaken identifications (Wells & Bradfield 1998, 1999). After making mistaken identifications, some eyewitnesses were given confirming feedback by the lineup administrator ("Good, you identified the suspect") whereas others were given no feedback about their identification. This feedback served to distort the eyewitnesses' recollections of the certainty they had in their identifications. Those given confirming feedback recalled having been very certain in their identification compared to those given no confirming feedback. This certainty-inflation effect is greater for eyewitnesses who make mistaken identifications than it is for those who make accurate identifications, resulting in a significant loss in the certainty-accuracy relation (Bradfield et al. 2002). In actual cases, it is common for lineup administrators (usually the detective in the case) to give confirming feedback to eyewitnesses, thereby inflating the certainty of the eyewitness and confounding the certainty-accuracy relation. Even if the lineup administrator refrains from giving the witness confirming feedback, the witness is likely to make confirming inferences from later events (e.g., an indictment of the identified person). Another real-world factor that can muddle the meaning of eyewitness certainty is

repeated testing. Shaw and his colleagues (Shaw 1996, Shaw & McClure 1996) have shown that repeated questioning of eyewitnesses on a matter about which they were inaccurate serves to inflate their certainty that they were accurate. Hence, it is unclear whether the .37 correlation between certainty and accuracy revealed in the Sporer et al. meta-analysis of experiments can be directly applied to actual cases in which there are other influences that inflate the certainty of eyewitnesses.

An even more promising indicator of eyewitness accuracy is the speed with which the eyewitness makes an identification from a lineup. Several studies have now found that witnesses who make accurate identifications from a lineup reach their decision faster than do witnesses who make mistaken identifications (Dunning & Perretta 2002; Dunning & Stern 1994; Robinson et al. 1997; Smith et al. 2000; Sporer 1992, 1993, 1994). In an impressive set of results, Dunning & Perretta found that those who made their decision in less than 10–12 seconds were nearly 90% accurate in their identifications from a lineup whereas those taking longer were approximately 50% correct. The 10–12-second rule was developed post hoc to produce the best separation of accurate and inaccurate witnesses, so some caution is called for with regard to how well the 10–12-second rule works in other situations; but the general relation between accuracy and speed of identification has received support in several studies. In addition, the idea that faster identifications are more likely to be accurate than are slower identifications makes good theoretical sense. It has long been theorized that mistaken identifications result from a deliberated judgment in which witnesses compare one lineup member to another and use inferences and elimination strategies to decide which person must be the culprit whereas accurate identifications result from a more automatic recognition process that does not require comparisons of one lineup member to another (Wells 1984a).

Lay Observers' Judgments of Accuracy

Observers (e.g., jurors) have little ability to make correct discriminations between accurate and inaccurate eyewitness identification testimony. Several methods have been used to assess the adequacy of people's judgments about eyewitness identification accuracy. Surveys, for example, show poor agreement (often less than 50%) between the answers that lay people give about variables affecting eyewitness identification accuracy and the answers researchers score correct based on the empirical literature (e.g., Deffenbacher & Loftus 1982, McConkey & Roche 1989, Noon & Hollin 1987). Another approach has been to use "prediction" studies in which eyewitness identification experiments are described and people are asked to predict the results. The results of these studies show a tendency to overestimate eyewitness identification accuracy and a failure to correctly predict interactions between variables (e.g., Brigham & Bothwell 1983, Wells 1984b).

A third approach is to cross-examine eyewitnesses to staged crimes and to ask subject-jurors to determine whether witnesses made accurate or mistaken identifications. In a series of experiments using this methodology, subject-jurors

have shown little or no ability to make such discriminations (Lindsay et al. 1989, Lindsay et al. 1981, Wells et al. 1981, Wells & Leippe 1981, Wells et al. 1979). Because observers' belief rates exceeded eyewitnesses' accuracy rates, these studies are commonly cited as evidence that people are overbelieving of eyewitnesses. However, this pattern of overbelief is restricted primarily to poorer witnessing conditions; when witnessing conditions were good, belief rates and eyewitness identification accuracy rates were more similar. In addition, mock jurors sometimes underbelieved the eyewitnesses who had quite low levels of certainty.

SYSTEM VARIABLES

System variables are those that affect the accuracy of eyewitness identifications and over which the criminal justice system has (or can have) control. In general, these tend to be lineup test factors, such as how witnesses are instructed prior to viewing a lineup or how the lineup is structured. The distinction between system variables and estimator variables is consequential in several respects. Whereas estimator variables can at best increase the probability that the criminal justice system can sort accurate from inaccurate eyewitness identifications, system variables can help prevent inaccurate identifications from occurring in the first place. Consider, for instance, the idea that jurors tend to overbelieve eyewitness identification testimony. Although expert testimony about eyewitness identification might manage to reduce jurors' tendencies to overestimate eyewitnesses' accuracy, the system variable approach might enable eyewitness identification accuracy to match the level of jurors' beliefs (Seelau & Wells 1995).

The procedure used by crime investigators conducting a lineup has been likened to that of researchers conducting an experiment (Wells & Luus 1990). Crime investigators begin with a hypothesis (that the suspect is the culprit), create a design for testing the hypothesis (embed the suspect among fillers), carry out a procedure (e.g., provide pre-lineup instructions and present the group to an eyewitness), observe and record the eyewitness's behavior (witness decision), and then interpret and revise their hypothesis (whether the suspect is the culprit). All the types of things that can go wrong with an experiment to cause misleading results can also go wrong with a lineup. For instance, the instructions might bias the witness, the hypothesis might be prematurely leaked, the design might be flawed, the behavior might be misinterpreted, confirmation biases might be operating, and so on. Indeed, a great deal of the research literature on system variable eyewitness identification could be construed as the extension of sound experimental methodology to the design and procedure of police lineups.

Most system variable research in eyewitness identification can be placed into four categories: instructions, content, presentation method, and behavioral influence. Before reviewing these system variables, however, it is important to understand the role played by the presence versus absence of the culprit in the lineup and the concept of a relative-judgment decision process.

Culprit-present Versus Culprit-absent Lineups

A lineup might or might not include the actual culprit. If police investigators have unknowingly focused on an innocent person as their suspect and place that suspect in the lineup, then the eyewitness(es) will end up viewing a lineup for which the only correct answer is "not there." Research repeatedly shows that culprit-absent lineups present great problems for eyewitnesses. The same eyewitnesses who identified an innocent person from a culprit-absent lineup might otherwise have been able to identify the actual culprit from a culprit-present lineup (Wells 1984a). In one study, for example, 54% of eyewitnesses were able to identify the actual culprit from a 6-person culprit-present lineup and 21% made no identification. When the culprit was removed without replacement (making it a 5-person culprit-absent lineup), however, the rate of no identification rose only to 32%, with the other 68% of the eyewitnesses who saw this lineup mistakenly identifying someone from the 5 remaining members of the lineup (Wells 1993).

A theoretical view that has been used heavily in the eyewitness identification literature is that eyewitnesses tend to use a relative-judgment decision process in making identifications from a lineup (Wells 1984a). The relative-judgment conceptualization states that an eyewitness tends to select a person from a lineup who most resembles the eyewitness's memory of the culprit relative to the other lineup members. Although the relative-judgment decision process permits eyewitnesses to do a reasonable job of identifying the culprit from a culprit-present lineup, when eyewitnesses view a culprit-absent lineup there will likely be one lineup member who looks more like the culprit than the others.

An alternative explanation of the errors witnesses make with culprit-absent lineups is that eyewitnesses tend to have lax criteria of resemblance; under culprit-absent circumstances, innocent lineup members easily meet these undemanding criteria (Ebbesen & Flowe 2002). Experimental data have not yet favored one of these interpretations over the other. Recent mathematical modeling of lineup data by Clark may help to refine our understanding of the roles of both relative judgments and criterion setting (Clark 2002).

Instructions

A variable shown repeatedly to have considerable impact on eyewitness identifications from lineups is the pre-lineup instruction given to eyewitnesses. Malpass & Devine (1981) were the first to demonstrate that the ratio of accurate to inaccurate identifications is strongly affected by whether or not eyewitnesses have been instructed (warned) prior to viewing the lineup that the culprit might or might not be in the lineup. A meta-analysis of the eyewitness identification literature on pre-lineup instructions reveals that the loss of accurate identifications from such instructions is minimal whereas the reduction of mistaken identifications is considerable (Stebay 1997). Stebay's meta-analysis showed that the presence of the "might or might not be present" instruction (compared to no instruction) reduced mistaken identification rates in culprit-absent lineups by 41.6% whereas accurate

identification rates in culprit-present lineups were reduced by only 1.9%. Based on this compelling research, the U.S. Department of Justice included this type of instruction in its first set of national guidelines for law enforcement on the collection of eyewitness evidence (Technical Working Group for Eyewitness Evidence 1999).

Lineup Content

When police have a suspect and decide to conduct a lineup, nonsuspect (filler) members of the lineup must be chosen. The importance of the selection of fillers as a system variable was demonstrated early, and it remains one of the primary active issues in the eyewitness identification literature. Ideally, lineup fillers would be chosen so that an innocent suspect is not mistakenly identified merely from "standing out," and so that a culprit does not escape identification merely from blending in. The first experimental demonstration of the importance of filler selection showed what can happen when this idea is not achieved. When fillers did not at all resemble the culprit, eyewitnesses tended to mistakenly identify an innocent suspect who resembled the culprit; when the suspect was the culprit, however, the manipulation of fillers had little effect on the rate of accurate identifications (Lindsay & Wells 1980).

Although the issue of lineup fillers seems simple at first glance, it is in fact complex. In the early demonstrations, researchers used their knowledge of the culprit's identity to select fillers. In actual cases, of course, the identity of the culprit is not known. Using the suspect as a proxy for the culprit will have different effects on rates of accurate and mistaken identification depending on whether the suspect is the culprit or an innocent person. Accordingly, selecting fillers who are highly similar to the suspect can help protect the innocent suspect in a culprit-absent lineup, but can also reduce accurate identifications in a culprit-present lineup (Luus & Wells 1991). Another line of research has shown that using the suspect as the reference point to select fillers can create a "backfire effect" in which an innocent suspect, being the origin or central tendency of the lineup, actually has an increased chance of being identified as the culprit (Clark & Tunnicliff 2001, Navon 1992, Wogalter et al. 1992).

An alternative to the strategy of selecting fillers based on their resemblance to the suspect is to select fillers based on their fit to the verbal description the eyewitness had given of the culprit. This fit-to-description strategy has several practical advantages (see Wells et al. 1994) and has worked well in some experiments (Juslin et al. 1996, Wells et al. 1993). However, biases against the innocent suspect can remain with the fit-to-description method when the description is especially sparse or when the innocent suspect happens to show a high resemblance to the culprit (Clark & Tunnicliff 2001, Lindsay et al. 1994). In actual cases, high resemblance between the innocent suspect and the culprit can occur by chance or it can occur whenever the innocent person became a suspect because she or he resembled a composite or a security video image of the culprit.

Lineup Presentation Method

Many alternatives to the traditional lineup have been proposed and tested, and future research will likely focus on solving the lineup system variable problems. The first proposed alternative to the traditional lineup was the blank lineup control method (Wells 1984a). A blank lineup is one that contains only fillers (no suspect). The eyewitness is first shown the blank lineup under the belief that this is the only lineup to be shown. The identification of someone from a blank lineup is known to be an error (because the lineup members are all fillers), and witnesses who make an identification from a blank lineup can thereby be discarded. Witnesses who do not make an identification from the blank lineup can then be shown the actual lineup (which contains a suspect). Data indicate that eyewitnesses who do not make an identification from the blank lineup are much more reliable on the second (actual) lineup than are those who were not screened with the blank lineup method. In effect, the blank lineup method is analogous to the use of a control condition in a within-subjects design and could be used in actual cases. In general, however, crime investigators have not liked the idea of the blank lineup control method on grounds that it "tricks" the eyewitness and could sever the eyewitness's trust in investigators.

Another proposed alternative to the traditional lineup procedure, and the best known of these alternatives, is the sequential lineup (Lindsay & Wells 1985). Unlike the traditional lineup in which the lineup members are shown to the eyewitness simultaneously, the sequential lineup shows the eyewitness only one lineup member at a time and requires the eyewitness to make a decision ("Is this person the culprit or not?") prior to viewing the next lineup member. The most powerful version of the sequential procedure is one in which the eyewitness does not know how many lineup members are to be viewed. In theory, the sequential lineup procedure prevents eyewitnesses from selecting the person who looks most like the culprit relative to the other lineup members, a process called relative-judgment decision (see above) (Wells 1984a). To the extent that relative judgments are operating, eyewitnesses will have difficulty with culprit-absent lineups because by definition someone in the lineup resembles the culprit more closely than the other lineup members do. Unlike the simultaneous lineup, the sequential lineup prevents eyewitnesses from making a relative-judgment decision because at any point in the sequence a lineup member who has not yet been viewed may turn out to resemble the culprit more than any person viewed thus far. Eyewitnesses must compare each member of the sequential lineup to their memory of the culprit and thus make a more "absolute judgment" about identity. A recent meta-analysis of 25 studies comparing simultaneous and sequential lineups showed that the sequential lineup reduced the chances of mistaken identifications in culprit-absent lineups by nearly one half (Steblay et al. 2001). Unfortunately, the sequential technique was also associated with a reduction in accurate identification rates in culprit-present lineups. Although this reduction was not as great as that in mistaken identifications, it was nevertheless statistically reliable. The pattern of these results has led Ebbesen &

Flowe (2002) to speculate that the sequential lineup raises the criteria for making a positive identification rather than changing the process from relative to absolute judgments.

Another alternative to the traditional lineup is the elimination lineup, a procedure in which the witness's task is to eliminate all but one lineup member and then make a separate decision as to whether that person is the culprit or not (Pozzulo & Lindsay 1999). Although the elimination lineup does not seem to work well with adults, it seems to eliminate some of the problems young children have with lineups.

Behavioral Influence: The Need for Double-Blind Testing

One of the ways that the justice system itself can influence eyewitness identification evidence is through the behaviors of the person who administers the lineup (Wells 1993). Commonly, the person who administers a lineup is the case detective who, of course, knows which member of the lineup is the suspect and which members are fillers. The need for double-blind testing is well established in the behavioral sciences (Rosenthal 1976) but is largely unknown or unheeded in criminal investigation procedures and forensic science (Risinger et al. 2002). Lineup administrators could inadvertently communicate their knowledge about which lineup member is the suspect and which members are merely fillers to the eyewitness through various verbal and nonverbal means. Phillips et al. (1999) manipulated lineup administrators' assumptions about the identity of the culprit and found that this manipulation affected the choices that eyewitnesses made from the lineup, especially when a sequential lineup procedure was used. In addition to influencing eyewitnesses' choice of particular lineup members, the person administering the lineup can cause other problems. Wells & Bradfield (1998, 1999) found that post-identification suggestions to eyewitnesses from lineup administrators led mistaken eyewitnesses to develop high levels of false certainty that they had made an accurate identification. The problem of influence from the lineup administrator is easily fixed by having lineups administered by someone who does not know which lineup member is the suspect and which ones are fillers (Wells et al. 1998).

Base Rates as System Variables

Base rates can be considered system variables in some cases. The important base rate in eyewitness identification is the base rate for the culprit being present versus absent in a lineup. Most mistaken identifications occur when the culprit is not in the lineup. Although the relation between the culprit-absent versus culprit-present base rate and the chances of mistaken identification has been established and modeled mathematically (Wells & Lindsay 1980, Wells & Turtle 1986), the case was only recently made for treating this base rate as a system variable (Wells & Olson 2002). Previously, this base rate was treated as a fixed (albeit largely unknown) variable in actual cases. In fact, however, no laws or rules determine

when a suspect is placed in a lineup and, therefore, this base rate varies as a function of the decisions crime investigators make when conducting a lineup. Consider, for instance, two police departments, a lax-criterion department and a strict-criterion department. In the lax-criterion department, investigators will place a suspect in a lineup for the slightest of reasons (e.g., a mere hunch) whereas the strict-criterion department requires certain evidence against a person (e.g., possession of stolen goods) before placing that person in a lineup. These two departments will, over the long run, have different base rates for culprit-present and culprit-absent lineups. Suppose, for example, that over a run of 1000 lineups the lax-criterion department shows 500 culprit-absent lineups and 500 culprit-present lineups whereas the strict-criterion department shows only 100 culprit-absent lineups and 900 culprit-present lineups. Given equivalent eyewitnesses in both of these departments, mistaken identifications of suspects will be nine times as likely in the lax-criterion department than in the strict-criterion department. (These surprising differences in the chances that an identification will be mistaken are simple derivations from Bayes' theorem.) Although the justice system has not yet done so, it could control the culprit-present versus culprit-absent base rate by requiring "probable cause" before placing someone in a lineup (Wells & Olson 2002). The base rate for culprit-present and culprit-absent lineups might be the most powerful system variable affecting the chances of mistaken identification.

PROBLEMS AND PROSPECTS

In spite of the successful application of the eyewitness identification literature, significant work has yet to be done. The eyewitness identification literature has been driven much less by theoretical frameworks than by practical perspectives. Two problems are related to this state of affairs. One is that the premium on application and forensic relevance reduces the interplay and sharing of ideas between eyewitness identification researchers and their counterparts in basic areas of psychology, especially cognitive and social psychology. In addition, the experimental eyewitness identification literature is likely never to be complete enough to cover every possible situation that arises in actual cases; hence, better theory is needed to generalize this body of literature and to fill in gaps regarding what is likely to happen under various conditions.

A second concern is that while laboratory data on eyewitness identification are extensive, some key forms of real-world data are lacking. Certain estimable rates of eyewitness identification behavior and lineup conditions from actual cases could assist the design and interpretation of laboratory work. For instance, there have been no empirical estimates of the base rate for culprit-present versus culprit-absent lineups in actual cases. Although it is difficult to establish the ground truth (actual guilt or innocence) needed for precise estimates of this base rate in actual cases, methods exist for estimating upper limits (see Wells & Olson 2002). In addition, although the identification of a suspect from a lineup usually cannot be definitively classified as an accurate or mistaken identification in an actual case, the

identification of a filler is a known error in actual cases and the rate at which these known errors occur can be informative. Two estimates of the filler identification rates in actual cases have been published. Wright & McDaid (1996) reported a rate of about 20% and Behrman & Davey (2001) reported a rate of 24%. One problem in collecting filler identification data from real cases is that police records often do not distinguish between eyewitnesses who make identifications of a filler and those who make no identification, which can result in a serious underestimation of the rate of filler identifications (Tollestrup et al. 1994). Another problem is that filler identification records from actual cases often lack an indication of the level of eyewitness certainty. These problems can be avoided by scripting data collection with police departments.

Actual case data of these types (e.g., base rates, filler identification rates, eyewitness certainty on known errors) can supplement the laboratory literature on eyewitness identification in two important ways. First, actual case data can be compared to laboratory data to see if the general rates of certain behaviors (e.g., nonidentification responses) are similar. Second, the rates for certain conditions in actual cases (e.g., rates of culprit-present versus culprit-absent lineups) are critical for Bayesian estimations of posterior probabilities that cannot themselves be derived from experiments.

Eyewitness identification research is likely to continue to focus on system variables for the foreseeable future because of the way system variables can be mapped onto the problem of improving eyewitness identification accuracy in actual cases. At the same time, estimator variables might be re-emerging with new promise for postdiction for three reasons. First, conditions are being found in which eyewitness certainty might be more closely related to eyewitness identification accuracy than once thought, especially when external influences on eyewitness certainty are minimized. Second, new postdiction variables, such as decision time, are emerging. Third, Bayesian analyses are being used to show that some eyewitness responses to lineups, such as filler identifications, have postdiction value in exonerations. Each of these represent potentially superior estimator variables because they can be more precisely measured in actual cases than can some of the more traditional estimator variables (such as stress or arousal). In any case, there is little evidence that eyewitness identification research is veering away from its applied orientation, especially in the face of recent successes in affecting legal policies and practices (Wells 2001, Wells et al. 2000).

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