AN OVERVIEW OF THE RESEARCH ON EYEWITNESS IDENTIFICATION OF STRANGERS, NEW AND OLD

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“Thinking in the field of eyewitness memory has changed dramatically in recent years. The change occurred due to the belated application of cognitive theories from basic science. Whereas the old message was to use sequential lineups, ignore confidence (even on the first test), and pay close attention to estimator variables, the new message is to use simultaneous lineups, pay extremely close attention to initial confidence, and ignore estimator variables.”

Over the past ten years, research has established that a witness who initially identifies a suspect with high confidence is highly reliable and this holds true whether certain factors thought to reduce the accuracy of eyewitness identification (e.g. stress, a weapon, a differences in race) are present. It turns out that these factors make it less likely that a witness will identify the true perpetrator, but not more likely that he will falsely identify an innocent suspect.

The new message is diametrically opposed that presented to the courts, judicial commissions, state legislatures, and the public at large, where experts have portrayed eyewitness identification as unreliable. Modern distrust of eyewitness identification accuracy may have started with the Supreme Court’s pronouncement that “[t]he identification of strangers is proverbially untrustworthy,” and certainly was fueled by the Innocence Project’s DNA exonerations (in which mistaken identification was a factor in approximately 70% of 365 cases). Into this fertile soil fell research that appeared to show that eyewitness identification is not accurate. To a certain extent, this is true: a witness who identifies a filler or who does not identify anyone when the perpetrator is present is not accurate. But these errors do not increase the risk to an innocent suspect. A witness who identifies an innocent suspect when the perpetrator is not present is not accurate – and it puts the innocent suspect at risk. Thus, the question is how likely is it that an innocent suspect will be chosen, especially with high confidence, in an array when the true perpetrator is not there. The answer now appears to be, highly unlikely.

The Innocence Project exonerations document that the false identification of innocent suspects with high confidence is unlikely. Despite what were undoubtedly less than “pristine” eyewitness identification

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1 Research has been conducted almost exclusively on the identification of strangers. If a subject knows the target, or has seen the target even once before, his/her data is excluded from the study. Researchers have not studied the effect of variables on the identification of known perpetrators because it would not be a worthwhile endeavor. The brain encodes, stores, and retrieves known and strange faces differently. Anyone who has seen the target before is excluded from the study because his/her data would skew the results. See National Academy of Sciences, Committee on Scientific Approaches to Understanding and Maximizing the Validity and Reliability of Eyewitness Identification in Law Enforcement and the Courts, IDENTIFYING THE CULPRIT: ASSESSING EYEWITNESS IDENTIFICATION, 118 (2014) (NAS) (“Eyewitness identification refers to recognition by a witness to a crime of a culprit unknown to the witness. “).

2 Mickes & Wixted, Eyewitness Memory (submitted 2019). This paper presents a detailed scientific review of the change in thinking.

3 United States v. Wade, 388 U.S. 218, 228 (1967) (quoting then-Professor Felix Frankfurter, The Case of Sacco and Vanzetti, The Atlantic (March 1927)). The examples given by the Supreme Court involve unfair lineups (in which the fillers do not resemble the suspect) and other highly suggestive procedures.

4 The Innocence Project reports that 259 cases involved eyewitness misidentification, but apparently this number also includes perjury cases. As a frame of reference, the Innocence Project reports that for cases accepted for DNA testing and closed between 2004-2008, DNA evidence excluded the individual in question in about 43% of cases it accepted, included the individual in question in about 42% of cases, and the remaining 15% had no results or were deemed non-probative.
procedures in these cases, not one of the initial identifications was made with high confidence. Case in point, the identification of Ronald Cotton by Jennifer Thompson. After looking at the array for 3-5 minutes (itself an indication of low confidence), Ms. Thompson’s first words were “I think it’s him.” Her confidence was bolstered by the detective. Nevertheless, in a second procedure – where Cotton was the only one who had appeared in the first array – she again hesitated for several minutes, was equally uncertain, and was again bolstered. By the time of trial, she was “absolutely sure.” So too the other innocence Project cases. The error was not that of the eyewitnesses. They were honestly telling law enforcement that it could not rely on them. The error was that of the police, followed by prosecutors, courts and juries, who did not understand that a low-, or even moderate-confidence initial identification, standing alone, was too likely to be wrong to support an arrest or conviction.6

There is now sufficient scientific evidence contrary to the old message to eliminate a consensus – if one ever existed – that would support instructions warning jurors to be skeptical of eyewitness testimony,7 if not yet to mandate that such instructions be exactly the opposite of the Henderson instruction and others like it.

**Estimator Variables** 8

Using different statistical methods that focus on suspect identifications, researchers have found that “as the conditions of encoding and retrieval become less favorable, overall accuracy will decline, but the accuracy of a suspect ID made with a particular level of confidence (e.g., the accuracy of a high-confidence suspect ID) will remain unchanged.” 9 Thus, it is important to ascertain the witness’s level of confidence initially.

**Confidence and accuracy**

“[T]he idea that initial confidence is not strongly related to accuracy conflicts with virtually all empirical evidence – both in the lab and in the real world – that has accumulated over the last 15 to 20 years. . . . These studies have established beyond any reasonable doubt that, for adults who make an ID from a

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5 See IDENTIFYING THE CULPRIT, at 10, Box 1-1 (2014).
6 “[E]ven low-confidence [0-60%] suspect IDs are fairly likely to be correct (about 83% correct), though most would probably agree that the 17% error rate is too high to justify a conviction based on a low-confidence ID alone.” Wixted, Mickes, Clark, Gronlund & Roediger III, Initial Eyewitness Confidence Reliably Predicts Identification Accuracy, American Psychological Assn., 515, 519 (September 2015).
8 Estimator variables relate to the crime, the witness, and other circumstances over which law enforcement has no control, such as stress, the presence of a weapon, racial differences, distance, lighting, exposure length, retention interval, etc. “
lineup, the relationship between initial confidence and accuracy in a typical forensically-relevant lab study – precisely the kind of study that once convinced the field that the relationship is weak – is in fact strong."  

The question before any court in a trial is not how accurate eyewitnesses are overall. The question is how accurate, and hence how reliable, are witnesses who identify suspects with high confidence initially. Suspects who are not chosen are not prosecuted (at least not on the basis of eyewitness identification), nor are fillers. Suspects identified with less than high confidence are not – or should not be -- prosecuted unless there is other evidence of identification (DNA, fingerprints, GPS, surveillance cameras, tag readers, possession of stolen property, etc.).

Three years ago, two researchers, often on opposite sides of the question, reanalyzed a number of studies using a new statistical method that excludes filler- and non-identifications. They found that, at least under “pristine” viewing conditions, a highly confident witness was highly reliable. This is true even when circumstances discussed below are present. Thus, for witnesses who are 90-100% confident, the difference in accuracy is generally less than a percentage point or two between the absence or presence

10 Wixted, Mickes, Clark, Gronlund & Roediger III, Initial Eyewitness Confidence Reliably Predicts Identification Accuracy, American Psychological Assn., 515, 516, 518 (September 2015) (emphasis in original). See also Dobolyi & Dodson, Eyewitness Confidence in Simultaneous and Sequential Lineups: A Criterion Shift Account for Sequential Mistaken Identification Overconfidence, J. Exp. Psychol.: Appl., 345, 345 (2013) (citations and parentheticals omitted) (there is a “growing number of studies [showing that] the magnitude of an individual’s confidence rating in a lineup decision can be well calibrated with its likely accuracy.”); Palmer, Brewer, Weber & Nagesh, The Confidence-Accuracy Relationship for Eyewitness Identification Decisions: Effects of Exposure Duration, Retention Interval and Divided Attention, American Psychol. Assn., 55, 56 (2013) (“[T]here is a growing body of evidence that points to a meaningful CA relationship under certain conditions. For example, confidence has been shown to be a useful predictor of accuracy when . . . the witness makes a positive identification as opposed to rejecting the lineup.”); Older studies, including those evaluating real cases, also have found a strong relationship. See Behrman & Richards, Suspect/Foil Identification in Actual Crimes and in the Laboratory: A Reality Monitoring Analysis, Law & Hum. Behav., 279, 297 (2005) (a mixed archival and laboratory study concluded that “witnesses who display high levels of certainty . . . are unlikely to choose innocent persons.”); Lindsay, Read & Sharma, Accuracy and Confidence in Person Identification, the Relationship is Strong When Witnessing Conditions Vary Widely, Am. Psychol. Soc., 215, 217 (May 1998) (“These considerations [variability in exposure duration, retention interval, unusual appearance, difference in appearance] suggest that ability to identify the perpetrator varies greatly from one real-world witness to another, and thus, in turn, suggests that the real-world AC relationship is strong.”).


12 Wixted & G. Wells, The Relationship between Eyewitness Confidence and Identification Accuracy: A New Synthesis, Psychological Science in the Public Interest, 10, 24 (2017). There is a difference of opinion as to whether the conditions have to be pristine. See Mickes, Clark., & Gronlund, Distilling the Confidence-Accuracy Message: A Comment on Wixted and Wells, Psychological Science in the Public Interest (2017). See also Mickes, Receiver operating characteristic analysis and confidence-accuracy characteristic analysis in investigations of system variables and estimator variables that affect eyewitness memory, J. Appl. Res. Mem. & Cog., 93, 101 (2015); Wixted, Mickes, Dunn, Clark & W. Wells, Estimating the reliability of eyewitness identifications from police lineups, Proceedings of the National Academy of Sciences, 304, 304 (2016). See discussion at note 76 infra.
of the factor: Same-Cross Race: 96.0-95.3%; No Weapon-Weapon: 93.3-100%; Full-Divided Attention: 98.7-98.0%; 90 sec.-5 sec. Exposure: 97.8-97.5%; Immediate-Delayed Identification: 97.6-96.8%. Average accuracy for witnesses who are 70-80% confident is about 90% and for witnesses who are 0-20% confident about 63%.

A statement of confidence must be taken immediately after the initial identification if the witness has not otherwise indicated his or her level of confidence.

**Speed of Identification**

The most recent study on the speed of an identification found that high-confidence witnesses who identify the suspect within 5 seconds were 97% accurate; but even low- and moderate-confidence witnesses were 95% accurate in the same time frame. This suggests that speed alone may be an indicator of accuracy. Other studies have reached similar conclusions with different times and different statistical methods. There seems to be no dispute that “jump-out identifications” are “desirable witness expressions of absolute certainty.”

**Stress**

Three recent studies indicate that stress decreases true identifications, but does not affect false identifications. In one, the “results indicate that anxiety degrades performance in a face-matching task, but only with respect to hits, not false alarms. This finding . . . provides further support for the dissociation between the ability to accurately identify a genuine face match (i.e., anxiety lowers hit rates) and the ability to accurately identify a lack of a match (i.e., anxiety does not affect false alarm rates).”

In another, “emotional participants were more likely to incorrectly identify [a filler]” in a target present lineup but “there was no association between the experience of emotion and lineup decision” in a target absent lineup.

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13 A statement of confidence need not be given in percentages and it may be preferable to use words. High confidence is marked by statements like “That’s him!” “positive” “definitely him” “I’ll never forget that face” and “I’m sure”; moderate confidence by “very similar” “looks like” “looks most like” “pretty sure” “I think it’s him” and “pretty certain”; and low confidence by “looks similar” “possibly the guy” “maybe” “I think but I am not sure” and “not too sure”.


15 See, e.g., Dodson & Dobolyi, *Confidence and eyewitness identifications: The cross-race effect, decision time and accuracy*, Appl. Cog. Psychol., 113, (2016), citing Sauerland & Sporer, *Fast and confident: postdicting eyewitness identification in a field study*, J. Exp. Psychol.: Appl., 646 (2009) (“Fast identifications (6 seconds or less) and confident (90-100%) individuals showed an impressive 97% accuracy rate when they selected someone from a lineup.”).


lineup. The third specifically found that “Stress had no impact on identification performance in target-present or target-absent line-ups.”

Two earlier studies often are cited for the proposition that “stress reduces accuracy.” This suggests that a person under stress is more likely to falsely identify an innocent suspect. But the studies themselves do not support such a conclusion. One stated explicitly that “[t]he overall negative impact of heightened stress on accuracy of face identification was due entirely to a substantial effect on hit rate for TP [target-present] lineups. The correct rejection rate for TA [target-absent] lineups was unaffected by stress level.” The other study, frequently characterized as being more ecologically valid, actually “showed that stress reduced the correct identification rate in target present lineups, but had no effect on the mistaken identification rate in TA [target absent] lineups.” Thus, stress is not likely to lead to the false identification of an innocent suspect.

**Weapon-focus effect (WFE)**

A 2016 meta-analysis found that, because there were only four studies on target absent arrays, which had contradictory results, “[n]o conclusions can be drawn regarding the WFE on TA [target absent] lineups . . . This also implies that there seems not to be sufficient evidence for experts testifying for the defense on the weapon focus effect with respect to identification decisions, as this type of expert testimony typically focuses on factors contributing to the likelihood of false identifications.”

One 2016 study found an increase in the false ID rate when a weapon is present but the effect was very small compared to a much larger effect on the overall correct ID rate. For highly confident witnesses, the WFE was negligible. Thus, the authors asked, “can identifications made by highly confident eyewitnesses (those most likely to make it to trial) be trusted? In other words, are these identifications highly accurate? [The data] show that they are.”

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23 Carlson, Dias, Weatherford & Carlson, *An Investigation of the Weapon Focus Effect and the Confidence-Accuracy Relationships for Eyewitness Identification*, J. Appl. Res. Mem. & Cog., 1, 1, 6 (2016) (“weapon presence, whether visible or concealed, [does] not negatively impact the confidence-accuracy relationship. In fact, participants were best calibrated when the weapon was clearly visible,” and all conditions produced under-confidence not over-confidence.).
24 *Id.* at 7.
Neither field nor archival studies have found a weapon focus effect.\textsuperscript{25} Even in the laboratory, the weapon focus effect on identification accuracy is described as “small, or “not of great magnitude (10%).”\textsuperscript{26} It is said to be a reliable effect “particularly in crimes of short duration” when the weapon is visible.\textsuperscript{27} However, there is no “systematic exploration of exposure duration” in the WFE literature.\textsuperscript{28} In addition, one study found no weapon focus effect when the perpetrator was seen before he displayed a gun.\textsuperscript{29} In an effort to explain why various field studies have not found a significant weapon focus effect, researchers have theorized that “close” proximity to the armed perpetrator may reduce the effect.\textsuperscript{30}

**Cross-race**

Two studies on the cross-race effect have been published in recent years. In one, there was a difference of only 3\% between same- and cross-race faces (black and white) in the aggregate (all confidence levels combined) and a 3\% difference for witnesses who were 100\% confident.\textsuperscript{31} These small differences may be statistically significant, but the magnitude of the effects are not substantive enough to conclude that as a general matter people may be less accurate in identifying a person of another race. Moreover, when the data in this study were reanalyzed, virtually no difference in accuracy was found for same-and cross-race identifications when witnesses were 90-100\% confident and a very small difference in accuracy when witnesses were 70-80\% confident.\textsuperscript{32} The other study concluded that a high-confidence initial identification was equally trustworthy for same and cross-race identifications.\textsuperscript{33}

Putting aside confidence, a number of other studies reveal that the difference between same- and cross-race identifications are very small; \textsuperscript{34} does not occur when “it is important to differentiate between


\textsuperscript{27} Steblay (1992), supra, at 421.


\textsuperscript{29} See Mitchell, Livosky & Mather, *The Weapon Focus Effect Revisited: The Role of Novelty*, Legal & Criminol. Psychol., 291, 295 (1998) (“This finding supports the contention that the obtained [reduction] is in fact an encoding phenomenon occurring as a function of exposure to, and affecting only details seen at the same time as, the experimental item.”).


\textsuperscript{31} Dodson & Dobolyi, *Confidence and Eyewitness Identifications: The Cross–Race Effect, Decision Time and Accuracy*, Appl. Cog. Psychol., 113, 118, Figure 1 (2016). The data in this study were reanalyzed by Wixted & G. Wells (2017), supra, at 32, Figure 4F, who found virtually no difference in accuracy for same-and cross-race identifications when witnesses are 100\% confident and a very small difference in accuracy when witnesses are 80\% confident.

\textsuperscript{32} Wixted & G. Wells (2017), supra, at 32, Figure 4t


\textsuperscript{34} Jackiw, Arburthnot, Pfeifer, Marcon & Meissner, *Examining the Cross-Race Effect in Lineup Identification Using Caucasian and First Nations Samples*, Canadian J. Behavioural Science, 52, 56 (2008) (“[a]lthough the cross-race effect is known to be a robust effect, the effect sizes reported here are rather small; thus, replication of these results is necessary.”). Other studies have reported larger differences (up to about

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individuals in the category in the course of everyday life,” such as parents, bosses, and other influential social contacts;\(^35\) is eliminated by cross-race faces displaying expressions of anger;\(^36\) and disappears when moving faces were presented instead of a single static pose.\(^37\)

A significant proportion of cross-race studies use facial recognition, where many faces are seen for a very short amount of time.\(^38\) In one study, for example, the cross-race effect that was seen at 1/10 of a second was not observed at 1 second.\(^39\) There is little information on significantly longer exposures.

Neither field nor archival studies have found a cross-race effect.\(^40\)

It is probably true that many people are not as good at identifying a person of another race. However, the issue is not overall accuracy; it is the reliability of an identification made with high confidence. As with other estimator variables, it is likely that here are fewer cross- than same-race identifications. But those made with high confidence are no less reliable.

**Distance/Lighting**

There is only a handful of studies on distance and/or lighting and none has been truly replicated. They reach the unremarkable and intuitive conclusion that identification accuracy decreases as distance increases and lighting decreases. It is not yet clear whether adverse conditions increase false identifications significantly, or at all. However, in one study, in a very dark room (less than 0.3 lux) at a distance of 16.5 feet, 78% of the subjects correctly said that photographs were not those of a coworker (15%). Without scaling the results by confidence levels, however, it is difficult to tell whether there is any cross-race difference for witnesses who are likely to testify at trial.


\(^36\) Young & Hugenberg, *Individuation Motivation and Face Experience Can Operate Jointly to Produce the Own-Race Bias*, Social Psychological & Personality Science, 80, 83, 84 (2012) (citations omitted). Id. at 84 (citations omitted).

\(^37\) Zhao, Hayward & Bulthoff, *Face format at encoding affects the other-race effect in face memory*, J. Vision, 1, 5, 6 & 7 (2014).


\(^39\) Marcon, Meissner, Fruch, Susa & MacLin, *Perceptual identification and the cross-race effect*, Visual Cognition, 767, 771-772 (2010) (“significant [cross-race effects] were observed at the 100 ms and 500 ms encoding conditions, but were not observed when encoding time was 1000 ms and 1500 ms (statistical formulas omitted).”). See MacLin, MacLin & Malpass, *Race Arousal, Attention, Exposure, and Delay: an Examination of Factors Moderating Face Recognition*, 7 Psychol. Pub. Pol’y, 134, 135-136 (2001 (0.5 to 5 seconds); Meissner & Brigham (2001), supra, at 19, (median exposure duration of 3 seconds).

\(^40\) Behrman & Davey, *Eyewitness Identification in Actual Criminal Cases: an Archival Analysis*, Law & Hum. Behav., 475, 487 (2001) (“none of the classic eyewitness factors, race, weapon presence or witness type, produced significant or even marginally significant effects when the identifications were made at field showups.”).
(and when the face was illuminated by a flashlight, that percentage rose to 98.8%). We are aware of no study that examined distances of greater than 141 feet or less than 10 feet.\(^{41}\)

**Exposure time/Retention interval**

In a study comparing 5-second and 90-second exposures, “accuracy clearly increased with confidence in all exposure and retention interval conditions. This was particularly evident in the upper half of the confidence scale, and especially at the upper end of the scale (i.e., 90%-100% vs. 70%-80%) confidence). Together, these results suggest . . . confidence remained a useful indicator of accuracy in all experimental conditions.”\(^{42}\) Reanalyzing the same data using suspect identifications only, researchers found that “not surprisingly, memory was better (discriminability was higher) when exposure duration was longer . . . .” The data “indicate that participants appreciated the effect that exposure time would have on their memory and compensated for it by appropriately adjusting their confidence, particularly at the high-confidence end of the scale. . . . [Thus,] a high-confidence ID made from the 5 [second] condition was as likely to be correct as a high-confidence ID made from the 90 [second] condition.”\(^{43}\) The key point here is that “[w]hile participants in [the 5 second exposure] condition were less likely to make relatively high-confidence IDs, when they did, they were as accurate as high-confidence IDs from the long [90 second] exposure condition.”\(^{44}\)

In the leading meta-analysis of exposure duration studies, subjects were more accurate for “long” exposures than “short ones,” but the median difference between them was only 4.7 seconds and for half of the studies, the “long” exposures ranged from 1.25 seconds to 6 seconds,\(^{45}\) less than the exposure time for most crimes.

\(^{41}\) Wagenaar & Van der Schrier, *Face Recognition as a Function of Distance and Illumination: A Practical Tool for Use in the Courtroom*, Psychol., Crime & L., 321, 328, Table 2 (1996) (Even at a distance of 131 feet and illumination of 3000 lux (cloudy day), 29% subjects correctly identified a stranger and 9% incorrectly identified someone else). See Lindsay, Semmler, Weber, Brewer & Lindsay, *How Variations in Distance Affect Eyewitness Reports and Identification Accuracy*, Law & Hum. Behav., 1, 8, 9 (2008) (“[e]ven at 43 m [141 feet], identification evidence has some diagnostic value, and therefore probative value as well.”).

\(^{42}\) Palmer et al. (2013), supra, at 61


\(^{44}\) Mickes (2015), supra, at 96.

\(^{45}\) Bornstein, Deffenbacher, Penrod & McGorty, *Effects of exposure time and cognitive operations on facial identification accuracy: a meta-analysis of two variables associated with initial memory strength*, Psychol., Crime & L., 473, 477 (2012). The difference in exposure times for the 16 studies below the median ranged from 0.7 to 4 seconds. The difference in exposure times for the 16 studies above the median ranged from 10 seconds to, in one study, one hour. *Id.* at 478, Table 1. Extrapolating from the data on Table 1, the ranges below the median would have been along the lines of: 1.25 to 3.75 seconds (Wallace); 2 to 4 seconds (Brigham); 1 to 5 seconds (Malpass); 3 to 6 seconds (Meissner); 0.2 to 1.5 seconds (Semmler & Brewer). The longer exposure durations were 1.5 seconds, 3.75 seconds, 4 seconds, 5 seconds, and 6 seconds. This amount of time might be described as “brief or fleeting,” yet identification accuracy was better than at the shorter exposure durations.
As the retention interval increases, the proportion of high-confidence identifications decreases, but not their accuracy. A recent re-examination of four earlier studies on retention interval concluded that “high-confidence accuracy remained extremely reliable even as memory conditions deteriorated, so much so that high-confidence suspect ID accuracy was close to 100% correct whether the retention interval was as short as 1 week or as long as 9 months.”

**Intoxication**

As surprising as it may seem, at least moderate alcohol consumption has little or no negative effect on eyewitness accuracy, and may improve it. A 2016 study found that “intoxicated participants were no less likely than sober or placebo participants to make an accurate identification from a TP [target-present] lineup,” and there was “no significant association between alcohol condition and identification decision in a TA [target-absent] lineup.” A 2013 study found that “intoxicated eyewitnesses performed on the same level as their sober counterparts.” A 2007 study found that “[o]n recognition memory tasks, alcohol has been shown to decrease hit rates . . . but to have no effect on false alarm rates.” In a study comparing both “intoxication” and cross-race identification, those in the alcohol condition made fewer identifications – but alcohol diminished the difference between accurate same and cross-race identifications to 2 percentage points (81% v. 79%, “a small tendency,”) compared to 5 percentage points in the non-alcohol condition (86% v. 81%, “significantly higher”).

**Descriptions**

“Despite the clear intuition that witnesses who are better at describing a target should also be better at recognizing him, this relationship has proved to be quite elusive and generally weak.” In fact, in the

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47 Kneller & Harvey, *Lineup Identification accuracy: The effects of alcohol, target presence, confidence ratings, and response time*, European J. Psychol. Appl. to Legal Context, 11, 15 (2016). In fact, 45% of the subjects in the alcohol condition rejected the TA lineup compared to 50% in the placebo condition and 40% in the control (no-alcohol) condition.

48 Hagsand, Roos-af-Hjelmsater, Granhag, Fahlke & Soderpalm-Gordh, *Bottled memories: On how alcohol affects eyewitness recall*, Scandinavian J. Psychol., 188, 193 (2013). The results actually could be interpreted to suggest that alcohol increases eyewitness performance. In target present lineups, 40% in the higher alcohol dose group correctly identified the target compared to 5% in the lower alcohol dose group and 25% in the no-alcohol control group. Similarly, in target absent lineups, 45% of the higher alcohol dose group correctly rejected the lineup compared to 36.4% in the lower alcohol dose group and 23.8% in the no alcohol control group. *Id.* at 37, Table 1 and 38, Table 2.


50 Hilliar & Kemp, *Now Everyone Looks the Same: Alcohol Intoxication Reduces the Own-Race Bias in Face Recognition*, Law & Hum. Behav., 367, 372, 373, Figure 2 (2010). The entire span of accurate identifications regardless of alcohol consumption or racial differences in this study was seven percentage points (79% to 86%).

weapon focus study cited above, people were worse at describing the target than identifying him.\textsuperscript{52} Moreover, “efforts to describe a previously seen face can actually \emph{impair} subsequent memory performance, at least under some circumstances.”\textsuperscript{53} Thus, some degree of discordance is to be expected and does not indicate that a suspect identification should be treated with skepticism.

**Disguise**

Research on the effect of disguises is not consistent. In some studies, a hat reduced identification accuracy; in others, it did not. In at least two experiments, a hat did not increase false identifications although it reduced true ones.\textsuperscript{54} In another, “[t]arget disguise [baseball cap and dark sunglasses] . . . had no significant main effects on identification in either the target-present or the target-absent lineups.”\textsuperscript{55}

Overall, confidence appears to decrease with disguises, indicating that “witnesses are sensitive to some degree of their ability to make accurate identifications, and this sensitivity is in a form (confidence) understood by triers of fact.”\textsuperscript{56}

**System Variables**

As a prudential matter, law enforcement should follow what have been characterized as “pristine” identification procedures:

- Only one suspect in an array
- Suspect does not stand out
- Unbiased instructions (may or may not)
- Blind administration
- Taking a confidence statement immediately\textsuperscript{57}

As a scientific matter, however, there is little or no support for the proposition that the absence of some of these procedures would increase the false identification of an innocent suspect.

**One suspect who does not stand out**

There is no disagreement that a photo array or lineup ought to be fair; there should be only one suspect in an array or line and he or she should not stand out. Indeed, as noted above, the negative view of eyewitness identification accuracy stems in large part from cases where the fillers did not share important characteristics, such as race, age, height, with the suspect.\textsuperscript{58}

\textsuperscript{52} See Klobuchar, et al. supra.
\textsuperscript{53} Meissner et al. (2014), \emph{supra}, at 22; \emph{id.} at 21 (“the elicitation of elaborate verbal descriptions may lead participants to generate inaccurate details which then impairs their recognition performance”).
\textsuperscript{54} Mansour, Beaudry, Bertrand, Kalmet, Melsom & Lindsay, \emph{Impact of Disguise on Identification Decisions and Confidence with Simultaneous and Sequential Lineups}, Law & Hum. Behav., 514, 518 Table 1 (2012) \emph{id.} 521. Table 3.
\textsuperscript{56} Mansour et al. (2012), \emph{supra}, at 524.
\textsuperscript{57} Wixted & Wells, \emph{supra}.
\textsuperscript{58} \emph{United States v. Wade}, 388 U.S. 218, 228 (1967) (differences in age, hair color, race, height, etc.)
Witness instructions

The most popular witness instruction – and the only one that has been tested – is: “The person you saw may or may not be in the array.” Some experts claim that the failure to instruct a witness that the perpetrator “may or may not” be in the array could affect the reliability of an identification. This is based on studies comparing “biased” and “unbiased” instructions. The “may or may not” instruction is considered unbiased. Neutral or minimal instructions, however, are similarly unbiased and yield the same or superior results respectively.60

It can come as no surprise to a witness that he or she is being asked to look at an array because the police think they might have found the right perpetrator.61 Researchers, however, have not investigated whether there is any difference between an unbiased instruction and none at all. One set of researchers opined “[p]erhaps eyewitnesses, left to their own inherent judgment, are more competent decision makers than they are sometimes given credit.”62 These researchers also noted, “in order to obtain a significantly higher rate of false identifications when the offender was absent from the photospread, subjects had to be blatantly misled that the offender was in fact present in the photospread.”63 This suggests that asking a witness “can you identify the person who X in this array,” though somewhat biased, might not have a negative effect.

Other instructions have not been studied. The “police will continue to investigate” instruction seems unobjectionable.64 This and the “may or may not” are the only two instructions mentioned by the National Academy of Sciences. Two other instructions recommended by some advocates (that also have not been studied) are objectionable. First, it is not the job of an eyewitness to “clear the innocent or implicate the guilty.” That is the job of the police, prosecutors, and the court based on all of the evidence in the case.

59 Wells, Yang, Smalarz, Eyewitness Identification: Bayesian Information Gain, Base-Rate Effect-Equivalency Curves, and Reasonable Suspicion, Law & Hum. Behav., 99, 109 (2015) (“Biased lineup instructions are those that either fail to warn the witness that the culprit might not be in the lineup or imply that the culprit is in the lineup. Unbiased instructions, in contrast, warn the witness that the culprit might not be in the lineup.”); see Malpass & Divine, Eyewitness Identification: Lineup Instructions and the Absence of the Offender, J. of Applied Psych. 482 (1989) (“We believe that [the culprit] is present in the lineup . . . which of these is the person you saw” committing the crime.”); Leippe, Eisenstadt & Fauch, Cueing Confidence in Eyewitness Identifications: Influence of Biased Lineup Instructions and Pre-Identification Memory Feedback Under Varying Lineup Conditions, Law Hum. Behav. 194, 198 (2009) (“look carefully . . . and determine which person is the thief . . . and . . . click on your selection) (elipses in original).

60 Mickes, Seale-Carlisle, Wetmore, Gronlund, Clark, Carlson, Goodsell, Weatherford & Wixted, ROCs in Eyewitness Identification: Instructions vs. Confidence Ratings, XX (2017) (neutral: “If you see the person from the video in the lineup, please pick him; otherwise, choose the 'not present' option.); Paley & Geiselman, Effects of photospread Instructions, Am. J. Forensic Psych, 3, 7 (1989) (minimal: “In a moment I am going to show you a group of photographs. When you have looked at all the photos, indicate below whether or not you see the person who committed the crime. . . .”).


62 Paley & Geiselman, at 12.

63 Id.

64 Instructions like, “Do not assume that I know who the suspect is,” and “I cannot tell you if you have picked the right person or the wrong person,” also could alert the witness not to look to the administrator for confirmation. But they have not been studied.
not on the identification—or lack of identification—by one eyewitness. Second, a witness should identify the perpetrator if he can. Fear of reprisal, fear of being labelled as a “snitch,” ties to perpetrators or their families or friends, or simply a reluctance to get involved, mean that many witnesses do not come forward and/or are reluctant to cooperate. Encouraging those who have been identified as witnesses to “opt out” by instructing them that they are not “required to make an identification” does not advance the cause of justice or the protection of the community. Although the effect of such an instruction has not been scientifically investigated, it is difficult to imagine how it would increase the accuracy of eyewitness identifications. If it has any effect at all, it most likely would discourage identifications from being made, whether the suspect is innocent or guilty.

Double blind, blind, blinded administration (unless impracticable)

Based on research in other fields, the National Academy of Sciences recommended double-blind or blinded testing. However, “[t]here remains relatively little evidence evaluating the merits of double-blind lineup administration. Consequently, its status as a reform has more to do with the historical importance of blind testing in other fields than the existence of a definitive empirical base involving lineup testing.”

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65 Gronlund, Mickes, Wixted & Clark, Conducting an eyewitness lineup: How the research got it wrong, in THE PSYCHOLOGY OF LEARNING AND MOTIVATION, 1, 30 (Ross, ed. 2015). See also Greathouse & Kovera, Instruction Bias and Lineup Presentation Moderate the Effects of Administrator Knowledge on Eyewitness Identification, Law & Hum. Behav., 70, 81 (2009) (“This study illustrates that there are still many questions about the effects of administrator knowledge of a suspect’s identity and double-blind lineup administration on witness behavior that remain unanswered before solid policy recommendations can be made.”).

66 Phillips, McAuliff, Kovera & Cutler, Double-Blind Photoarray Administration as a Safeguard Against Investigator Bias, J. Appl. Psychol., 940, 947 (1999) (“Participant administrator’s knowledge of the suspect’s identity had a biasing effect in sequential photo arrays only . . . and then only when an observer was present. For observer-absent photoarrays, there were no differences in false identification rates for the single-versus double-blind procedures, irrespective of whether they were presented sequentially or simultaneously.”); Perlini & Silvaggio, Eyewitness Misidentification: Single vs Double-Blind Comparison of Photospread Administration, Psychol. Reports, 247, 252, 253 (2007) (“[t]here was no significant effect for photospread procedure (blind, informed) . . . “); Russano, Dickinson, Greathouse & Kovera, “Why Don’t You Take Another Look at Number Three?“: Investigator Knowledge and its Effects of Eyewitness Confidence and Identification Decisions, Cardozo Public Law Policy & Ethics, 355, 370-371 (2006), citing Russano, Dickinson, Cass, Kovera & Cutler, Testing the Effects of Lineup Administrator Knowledge in Simultaneous and Sequential Lineups (unpublished poster March 2002) (There was no evidence that investigators who were aware of the suspect’s identity elicited more false identifications or correct identifications as compared to investigators who were kept blind to suspect identity, regardless of lineup procedure. Analysis of the videotaped lineup administrations suggested that the lineup administrators did little to bias their lineups. Thus, the failure to find an effect can most likely be attributed to a lack of biasing behavior on the part of the lineup administrators, rather than on witnesses’ resistance to investigator bias cue. It is possible that lineup administrators may not have engaged in biasing behavior because the lineup procedure they were asked to follow was very structured and left relatively little room for individual variation, including biasing behavior.). But see Kovera & Evelo, The case for double-blind lineup administration, APA PsychNET (2019).
Hence, adverse consequences (in the form of exclusion, limitation, or jury instructions) should not be attached to the failure to administer photo arrays in a double-blind, blind, or blinded manner, especially where it was impracticable.

Simultaneous versus sequential presentation

There has been a question about whether simultaneous or sequential presentation of photo arrays or lineups is better. The National Academy of Sciences asked: “[C]an we draw definitive conclusions about which lineup procedure (sequential or simultaneous) is preferable? At this point, the answer is no.”

The debate continued, however, with Wells, Steblay, and Dysart (there is a sequential advantage) on one side and Amendola and Wixted (more good IDs, fewer bad ones with simultaneous) on the other. Before the National Academy of Sciences Report was issued, other researchers found no evidence for a sequential advantage. Since then, other researchers have found a simultaneous advantage.

67 National Academy of Sciences, supra, at 118. The International Association of Chiefs of Police recently dropped its long-standing recommendation that only sequential procedures should be used. See IACP, Model Policy Concepts & Issues Paper, 1 (September 2016) (“the sequential and simultaneous approaches are both valid methods of conducting an identification procedure and [this policy] does not recommend one over the other.”).


69 Gronlund, Carlson, Dailey & Goodsell, Robustness of the sequential lineup advantage. J. Exp. Psychol.: Appl., 140, 140 (2009) (“there appears to be no strong preference for conducting lineups in either a sequential or a simultaneous manner”); Malpass, Tredoux & McQuiston-Surrett, Public policy and sequential lineups, Legal & Criminal. Psychol., 1, 1 (2009) (“the corpus of research on sequential lineups does not satisfy the needs of policy sufficiently to justify its mandated use as the required identification procedure throughout the criminal justice system.”); Carlson, Gronlund & Clark, Lineup Composition, Suspect Position, and the Sequential Lineup Advantage, J. Exp. Psychol., 118, 118, 126 (2008) (“A sequential lineup advantage was found only for unfair lineups.”). See also Mickes, Flowe & Wixted, Receiver Operating Characteristic Analysis of Eyewitness Memory: Comparing the Diagnostic Accuracy of Simultaneous Versus Sequential Lineups, J. Exp. Psychol.: Appl., 361, 375 (2012) (finding evidence for a simultaneous superiority effect);

70 E.g., Meisters, Diedenhofen, Musch, Eyewitness identification in simultaneous and sequential lineups: an investigation of position effects using receiver operating characteristics, Memory Journal (2018) (“This result suggests that sequential lineups are not superior to simultaneous lineups, and may give rise to
In 2017, the U.S. Department of Justice issued guidance on the use of photo lineup procedures by federal law enforcement agencies, which noted that “there has been an evolution in views on whether the 'sequential' administration of a photo array (presenting the witness one photo at a time) results in more accurate identifications than a 'simultaneous' administration (presenting all of the photos at once).” It recommended the use of either simultaneous or sequential photo lineups while acknowledging that, although earlier research appeared to favor the sequential procedure, more recent research “reached different conclusions, suggesting that simultaneous procedures may result in more true identifications and fewer false ones.” Since then, more evidence has been amassed in support of simultaneous presentation of photo arrays.

At the present time, there is no basis for suggesting that displaying the photographs in an array one at a time reduces false identifications of innocent suspects. Indeed, the reverse seems to be true. There are fewer false identifications when all of the photographs in an array are displayed at the same time.

Taking an Immediate confidence statement

There is no disagreement that a confidence statement should be taken immediately after the witness identifies someone in the array, unless confidence already is indicated by the words the witness spoke or gestures he or she used, such as jabbing his finger at the photograph and saying, “this one, this one right here,” or “that’s the guy, that’s the guy who robbed me.”

There is some research that indicates that witnesses can be explicitly induced to pick a particular photograph and/or that feedback before a confidence statement is taken can inflate confidence levels. It is easier to establish that neither of these circumstances occurs with blind administration; video recording the procedure also could be used to the same effect. The same results can be had, however, by not saying anything to the witness after s/he has made an identification. Note that deliberately trying...
to influence a witness reduces the witness’s confidence and, therefore, may limit the witness’s use as an identification witness at trial.\textsuperscript{76}

It is odd that those who recommend taking an immediate confidence statement also support instructing the jury that “Although some research has found that highly confident witnesses are more likely to make accurate identifications, eyewitness confidence is generally an unreliable indicator of accuracy.”\textsuperscript{77} As discussed above, research now establishes that a confidence statement taken at the time of the initial identification is a very reliable indicator of accuracy. The problem in all of the exoneration cases is that the witnesses expressed low confidence at the initial identification and high confidence at trial.\textsuperscript{78} When the witnesses expressed low confidence initially, they were informing the authorities accurately that they were not sure. It was not enough to support a prosecution and conviction. Law enforcement should have paid attention. It did not. As a result, innocent people were convicted of crimes they did not commit. High confidence at the time of the initial identification, however, does not suffer from this disability and is highly reliable.

**Is There a Consensus?**

Is there a consensus? To the extent that there ever was a consensus, it no longer exists.\textsuperscript{79} The discussion above makes clear that there is strong and growing scientific support for the conclusion that eyewitness identification, measured by a witness’s level of confidence the first time he or she selects the suspect, is highly reliable and that high confidence outweighs any other estimator or system variable that is said to decrease eyewitness “accuracy.” This and other research led a number of distinguished scientists to agree with the propositions that new research has undermined the old consensus and that reliance on the old perspective could lead to policy decisions that are not based on a current scientific consensus. These scientists include members of the most prestigious scientific organizations in the country, the National Academy of Sciences, the Subcommittee of the National Academy of Sciences on Eyewitness

\textsuperscript{76} Clark, Brower, Rosenthal, Hicks & Moreland, \textit{Lineup administrator influences on eyewitness identification and eyewitness confidence}, J. Appl. Res. Mem. & Cog., 58 (2013) (deliberately steering a subject to the suspect resulted in more identifications, but false suspect identifications were made with lower confidence). In an earlier study, using a scale of 1-10, the mean confidence for the non-blind feedback condition was 7.53, below what would be considered high confidence. Dysart et al. (2011), \textit{supra}, at 317, Table 1.

\textsuperscript{77} \textsc{Model Criminal Jury Charges} (NJ) (citing \textsc{Henderson}, \textit{supra}, 208 N.J. at 253-55).

\textsuperscript{78} See Garrett, \textit{Convicting the Innocent: Where Criminal Prosecutions Go Wrong}, (Harvard U. Press 2011). As described, these procedures were not “pristine” but they did not lead to high confidence initial identifications. See Wixted, \textit{Time to Exonerate Eyewitness Memory}, Forensic Science International, 1 (2018) (“Blaming eyewitness memory for the failure of the criminal justice system to accept the inconclusive nature of the initial (uncontaminated) eyewitness evidence seems misguided. In addition to exonerating the innocent defendants who were wrongfully convicted, the time has come to exonerate eyewitness memory too.”)

\textsuperscript{79} Even though courts throughout the country believe that there is a consensus that eyewitness identifications are unreliable, see, e.g., \textit{Perry v. New Hampshire}, 565 U.S. 228, 263, (2012) (Sotomayor, J., dissenting), it may never have existed; that discussion is beyond the scope of this paper. In fairness, courts may not have been presented with the information in this paper, some of which is relatively recent. The Special Master in \textsc{Henderson} certainly was not made aware of contrary opinions that existed at the time.
Identification, and the American Academy of Arts and Sciences, along with others who have studied and/or published extensively in the field.

There currently is no unitary view of eyewitness identification evidence that would support giving jury instructions that suggest that it is inaccurate or unreliable. To do so, a court essentially would have to take judicial notice of facts that are in dispute. As a general rule, courts do not do that.

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See, e.g., Fed. R. Evid. 201 (“The court may judicially notice a fact that is not subject to reasonable dispute because it . . . can be accurately and readily determined from sources whose accuracy cannot reasonably be questioned.”).