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The Witness Who Was Not There:

Challenging the Reliability of Identifications Made from Images

Introduction

Imagine that someone commits a robbery. If an eyewitness sees the individual committing the robbery and identifies him, that identification is subject to significant review for reliability. Under the best circumstances, some jurisdictions consider all of the factors that impact the reliability of the identification, both in the control of the police (system variables) and out of their control (estimator variables), in making an initial determination as to the admissibility of the identification.[1] If the case goes to trial and the identification is admitted, the jury will be guided regarding how to consider that identification, including, in some jurisdictions, an admonition to remember that human memory is fallible and that "research has shown that there are risks of making mistaken identifications."[2] Even in jurisdictions with less robust identification jurisprudence, a judge must assess the identification, keeping in mind that "reliability is the linchpin in determining the admissibility of identification testimony."[3]

But what if, instead, that robbery is caught on surveillance camera video, and later, that same witness does not see it live but only views the video and then identifies that perpetrator? That identification, what we refer to as a "non-eyewitness identification," is dramatically different from both traditional eyewitness identification and the traditional use of video footage at trial, in which the footage acts as a supplement to the testimony of a person who was present at the scene the footage depicts. Non-eyewitness identifications are a significant departure because they allow a person who was *not* at the scene and did *not* observe the event to opine on what a video depicts.

Such non-eyewitness identifications are generally subject to none of the protections or limitations required of an eyewitness identification. If the non-eyewitness claims almost any degree of familiarity with the perpetrator, that identification will be admissible. The judge will not consider any suggestiveness in the circumstances leading to the identification or the risk of an irreparable misidentification. And the jury will not be told about these risks.

The disparate treatment of eyewitness identifications versus non-eyewitness identifications persists even though the memory tasks are in many ways similar in both eyewitness and non-eyewitness identifications: The witness is comparing his or her memory of a face to an image of a face and deciding if the memory and image are the same person. In the case of the eyewitness, the "face in memory" is from having actually witnessed a person commit a crime and, sometimes, from some prior exposure to that person during their life. In the case of the non-eyewitness, the face in memory is always from some prior exposure. But, except for the fact that claimed familiarity is always a factor in non-eyewitness

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identifications and only sometimes in eyewitness identifications, the underlying cognitive processes are typically very similar. And we know, empirically, that identification errors with eyewitnesses occur with familiar faces, just as with strangers: In a review of the first 25 years of DNA exonerations, 15 percent of misidentifications involved a witness with a prior confirmed familiarity with the person identified but who was actually innocent.[4] The inconsistent standards applied to identifications by eyewitnesses and non-eyewitnesses undermine the reliability of non-eyewitness identifications and the fairness of convictions that rest on them.

This article proceeds in three parts. Part I presents the science relevant to the accuracy of non-eyewitness identifications. Part II reveals courts' ongoing failures to apply the science to these kinds of identifications and presents the innovation of the article: a two-pronged, scientifically grounded approach that courts should use in assessing the admissibility of these identifications and in articulating jury instructions at trial. Part III applies this framework.

I. What We Know About the Factors That Impact the Reliability of Identifications Made by Non-Eyewitness

Video recordings are omnipresent. From cellphones that can record high-quality video and body-worn cameras on police officers,[5] to video doorbells,[6] video recordings truly have a universal presence.

The law has liberal standards for the admission of video evidence: If the proponent of the video evidence can demonstrate that the system that captured that video operates properly and the footage was downloaded properly, that video evidence is admissible in most jurisdictions as a "silent witness" that can stand on its own.[7] Moreover, eyewitnesses have always had a role in the evaluation of video evidence — under the "pictorial theory" method of authentication, the video serves as an adjunct to eyewitness testimony, supporting or supplying detail to that testimony, which can also encompass facts and feelings not viewable on a video.[8] In this article, we assume that the images presented to the non-eyewitness (and eventually the jury) are authentic and unaltered; a discussion of the manipulation or wholesale invention of images (for example, using artificial intelligence) is beyond the scope of the article.[9]

Compared to the wealth of research available on factors that affect the accuracy of eyewitness memory and identification, there is less research on the other side of this coin: non-eyewitness identifications from surveillance videos and still images. The research available does demonstrate, however, that identifications by non-eyewitnesses, especially minimally or moderately familiar non-eyewitnesses, are highly prone to errors. This research shows that image quality is the primary determinant of the accuracy of a non-eyewitness identification and that a number of situational factors — including familiarity, time delay, cross-race effect, and priming — will all affect the accuracy of a non-eyewitness identification.

A. Image Quality

Studies reveal that image quality is the most important factor impacting the reliability of identifications, at least on the lower end of the spectrum; *low-quality images lead to low identification accuracy*.[10] This is true for both civilians and police officers,[11] for stranger identifications and familiar identifications.[12] The accuracy rates in assessing whether a person is familiar or accurately identifying familiar faces is reduced when the image is blurred, the number of pixels is decreased,[13] or the distance of the face image from the camera is increased.[14] Together, these findings suggest that although familiar faces are generally recognized more accurately than unfamiliar faces, discussed further below, image quality affects face recognition accuracy for both familiar and unfamiliar faces.

Other factors relating to the characteristics of the image itself impact how the accuracy of an identification can be made by a non-eyewitness. Several studies suggest that at the time of the test, looking at a still image of faces will result in less accurate recognition than looking at a moving image.[15] In addition, in matching two simultaneously presented photographs of unfamiliar people, accuracy is significantly reduced when there are changes in lighting and viewpoint between the two images.[16]

These findings are important in forensic situations because rarely would the visual appearance of a person be identical between an initial viewing and a later identification. Further, surveillance cameras are often positioned high on buildings, recording incidents on the street below from a downward camera angle, which is likely to impair subsequent recognition accuracy of a person seen in full frontal view.

B. Situational Characteristics

Several situational characteristics impact the accuracy of identifications from videos.

Familiarity. Among the situational characteristics that affect the accuracy of identifications by non-eyewitnesses, perhaps the most important is whether the person observed is familiar to the observer. To clarify, a familiar person is one the observer has seen before, regardless of whether the observer remembers the person's name or where the observer encountered him or her. However, it is important to note that claimed familiarity is not the same as actual familiarity. Therefore, familiarity in fact consists of two components: (1) Is the person doing the identifying actually familiar with the person he or she perceives and (2) if so, how much does that familiarity help the accuracy of the identification?

To begin with the second question, although familiar people are more accurately recognized than strangers, correct recognition rates even for familiar people are far from perfect.[17] Moreover, familiarity exists on a spectrum: the more familiar an observer is with another person, the more likely the observer is to identify that person accurately.[18]

Exposure Duration. Another memory factor that relates to the degree of familiarity with the person observed is the duration of the initial exposure to the "recognized" person, that is, whether prior to the identification test, the observed person was initially seen for seconds versus minutes or more. Longer exposure times produce higher rates of accurate identifications and lower rates of misidentifications.[19]

Let's return to the first question: How good are people at determining whether they have seen a person before, that is, whether the person is familiar to them? This is important because familiarity is only helpful to accuracy if it is *actual* familiarity. People who have had the experience of believing they saw an acquaintance in a supermarket only to approach and realize that it was a stranger knows that it is common to mistakenly believe one is familiar with a stranger. Studies testing whether people can actually determine whether they are familiar with a person show false positive rates ranging from 16% to 23% with yearbook photographs, which are high-quality images.[20]

These findings are relevant to non-eyewitness identifications. For example, an officer who "recognizes" a person from a video is more likely to be correct and have a detailed memory of the person if the officer had spent more time face-to-face with that person than if the officer had just seen the person briefly, for example, hanging out in a park when the officer drove by.

Time Delay. The time delay between when the person was "recognized" and when he was last observed has a significant impact on the accuracy of identifications. One of the best-established principles of memory is that *memory tends to fade with the passage of time*;[21] memories are generally more accurate when tested immediately than after a delay. Thus, for example, an officer's report of recognizing a person in a video still is more likely to be correct if he is recognizing a person he saw within the past week than "last summer" or "a year ago."

Cross-Race Effect. It is well known that same-race faces are identified more accurately than cross-race faces, and this finding has been investigated and supported across a wide range of classifications of race and ethnicity.[22] However, it is not as obvious and not well known that the cross-race effect applies as well to face matching, where no memory for the initially seen face is involved.[23] This finding suggests that officers matching a previously seen face to a still from a video, and jurors matching the defendant in court to a video they are watching, will be less accurate when the observers — the officers or the jurors — are of a different race from the person in the video.

Priming. In identification procedures, *priming* can introduce bias into identification by suggesting that a particular person is the person whose image is on the surveillance or is present at the scene. A wealth of research shows that human perceptions are shaped by our expectations.[24] Our expectations bias what we see, especially when sensory input is weak or ambiguous.[25]

Often, when an image from a video is circulated to law enforcement to see if anyone can identify the perpetrator, a statement is circulated along with the still that summarizes the crime and the location where it occurred. This statement is likely to bias the identification by providing constraints on officers' memory search for a possible perpetrator.

A Note on Judgments of Confidence. As with eyewitness identifications, confidence expressed in the initial identification is likely to be the best indicator of eyewitness accuracy, as long as confidence ratings are obtained shortly after the initial identification and under uncontaminated conditions, two very important caveats that often are not present in identifications made in real cases.[26]

Police Officers as Eyewitnesses and Non-eyewitnesses. Jurors and other laypeople believe that law enforcement personnel are more credible than other witnesses when they testify in court[27] and, moreover, that officers are more accurate eyewitnesses than civilians.[28] However, research has been substantially documented that officers are not more accurate eyewitnesses than civilians.[29]

The State of the Science. Although eyewitness and non-eyewitness identifications differ in key ways, the bottom line is that many of the factors that may introduce bias, error, or inaccuracy into eyewitness identification can pervade non-eyewitness identification as well.

II. Embracing the Science: A Proposal for Assessing Non-Eyewitness Identifications from Video

The research above elucidates the key factors that impact the accuracy of non-eyewitness identifications: image quality, familiarity, time delay, cross-race effect, and priming. How does case law correspond to the science? A review of the case law reveals that a significant disconnect exists between the science and the law. After this review, we propose a new two-prong test to replace the inadequate standards currently being used to assess the admissibility and accuracy of non-eyewitness identifications. This test would represent a substantial improvement over the current, scientifically unfounded standards in use.

A. State of the Law Governing Non-Eyewitness Identifications

The standard almost all courts utilize for non-eyewitness identifications is that they are admissible if "some basis" exists for concluding that the witness is more likely to correctly identify the person in the video or photograph than the jury is.[30] That standard evolves from the standard for lay opinion testimony.

Both eyewitness and non-eyewitness identifications are identifications; in both, people judge that their memory for a person seen in one context is the same as their memory for a specific person seen in another context. However, non-eyewitness identifications have been treated as a separate domain, as lay opinion, since the first decisions to reckon with their admissibility.[31] Like all lay opinion, non-eyewitness identifications have been held to be admissible if it is "rationally based on the perception of the witness" and "helpful" to the jury.[32]

Such identifications are helpful, according to the courts to address the issue, because the non-eyewitness is familiar with the person he or she has identified and the jury is not familiar with the person.[33] Therefore, the addition of familiarity makes the non-eyewitness identification helpful to the jury, as compared to the jury simply attempting to determine if the defendant and the person on the video are the same.[34] Although this general concept comports with what the science reveals — as discussed above, that familiarity *can* be a helpful advantage in making an accurate identification — this principle frequently erodes into one in which any degree of claimed familiarity is used to justify the admission of non-eyewitnesses.[35] In the words of the Connecticut Supreme Court, non-eyewitness identifications are generally found to be admissible "unless the witness has had virtually zero prior contacts with the defendant."[36] Because minimal casual familiarity does not significantly enhance the accuracy of an identification, courts accepting the bare minimum of "familiarity" with a defendant are acting in direct contradiction to the scientific research.

Courts also consider the quality of the footage. Their consideration, however, is often directly contrary to the identification science. Many courts have held that the lower the quality the footage, the *more* helpful the non-eyewitness identification is.[37] Courts have similarly held that obstruction of the face of a person in a video is a reason to admit a non-eyewitness identification.[38] Some acknowledge that the content and quality of an image are important to making a reliable identification from that image, holding that in order for a non-eyewitness identification to be admissible, the images must be neither "unmistakably clear" nor "hopelessly obscured."[39] Nonetheless, in no reported appellate case to date has an image been deemed so hopelessly obscured to render an identification inadmissible.

This treatment of non-eyewitness identifications is incompatible with the scientific research reviewed above. The research makes clear that the face is the most important cue for accurate identi-

fications, even for familiar people, and thus, faces that are obscured cannot be accurately recognized. In other words, the quality of the footage is essential to an identification. Low-quality images cannot be miraculously deciphered, not even by someone who has seen the defendant before.[40]

Only one court has carried forward its embrace of scientific research in the eyewitness identification sphere into the non-eyewitness identification sphere. In *State v. Gore*, a case about a non-law-enforcement witness, the Connecticut Supreme Court reviewed the case law and determined that familiarity was the predominant driver in these decisions, but the familiarity bar is almost always met and further, that this "low standard for general familiarity tends to favor the prosecution."[41] The court therefore concluded that this low standard "does not afford sufficient protection to criminal defendants against good faith mistaken identifications" and held that a higher standard would set in Connecticut, requiring more than minimal familiarity.[42]

More important, the *Gore* court recognized that many of the same memory processes, and the concern over those processes, apply to both eyewitness and non-eyewitness identifications: "[E]yewitness identifications are different from identifications of a defendant in surveillance footage. The two contexts, however, overlap in one significant respect: both involve the witness' claimed recognition of the defendant."[43] That overlap means that "recent scientific developments that 'abundantly demonstrate the many vagaries of memory encoding, storage and retrieval; the malleability of memory; the contaminating effects of extrinsic information; the influence of police interview techniques and identification procedures; and the many other factors that bear on the reliability of eyewitness identifications'" are relevant in the non-eyewitness identification context as well.[44] The court noted in particular that "although familiarity increases the accuracy of identifications, these identifications are not immune from detracting factors such as expectations (the belief that one will come across a familiar face), the presence of a disguise, cross-racial identifications, and an increased distance between the witness and the target individual."[45]

Although this recognition of the application of identification science in this context is heartening, it is not without its limitations. The *Gore* court adopted the "not unmistakably clear or so hopelessly obscured" standard for the quality of the video.[46] The court also declined to increase the procedural safeguards for non-eyewitness identifications as it has for eyewitness identifications over the last decade.[47] Nor did the court consider the biasing impact of prior information; such information has been considered solely in the eyewitness identification context.

B. A Two-Prong Framework for Assessing Non-Eyewitness Identifications

In light of the scientific findings discussed above, we propose a two-prong framework for assessing the reliability of a non-eyewitness identification from video or image. This framework should guide the admissibility of such identifications either under the lay opinion rule or under eyewitness identification standards. As to the lay opinion rule, if an identification is unlikely to be accurate, it is not helpful to the jury, as required by that rule.[48] As to identification standards, if an identification is unlikely to be accurate, there is substantial likelihood of misidentification, which is the standard for exclusion of eyewitness identifications federally.[49] Through either admissibility lens, a non-eyewitness identification that is unlikely to be accurate is not probative, but highly prejudicial, and thus must be excluded under Federal Rule of Evidence 403 or its state counterparts. While we urge that non-eyewitness identifications should be assessed as identifications, instead of under the separate lay opinion track discussed above, regardless of which evidentiary rule guides the inquiry, what is important is that science is being used to inform the standards of accuracy and reliability.

Prong One: The Quality of the Video. The quality of the video should be assessed in light of the factors known to affect the accuracy of face identifications from videos. Rather than the "not unmistakably clear or so hopelessly obscured" standard, which allows into evidence identifications made from images too low quality to allow for accurate identifications, the factors below provide a more nuanced framework for assessment. These factors include:

- Image resolution and distance of the person to be identified from the camera.
- Whether the image of the person to be identified is moving or still.
- Lighting on the face of the person to be identified in the video.
- Viewpoint and camera angle of the person to be identified in the video.
- Presence of a hat, sunglasses, or other disguise on the person to be identified.
- Obstructions between the camera and the person to be identified.

As a threshold matter, an identification made from an image that is of such low quality that the probability of an accurate identification is unacceptably low must be excluded without consideration of any other factors. This prong requires courts to assess whether there is a reasonable probability of an accurate identification, given the quality of the image.

The reason that image quality is a threshold matter is because, as reviewed above, the odds of a person making an accurate identification from a low-quality facial image are unacceptably low. We do acknowledge that familiarity can reduce the impact of low image quality — you are more likely to be able to recognize your wife from a low-quality image than a stranger is — but at a certain point of lack of clarity, familiarity cannot overcome poor image quality. Video quality affects face recognition accuracy for both familiar and unfamiliar faces.[50] Thus, given the risk of a mistaken identification from even a subject who claims to be familiar with the person, the task should not be attempted without an image of sufficient clarity that there is a reasonable probability of an accurate identification.

The other reason video quality is a threshold issue is because of the effect of cognitive bias. As discussed earlier, our expectations shape our perceptions.[51] But further, it has been demonstrated that once a person knows (or thinks she knows) what a picture shows, that knowledge creates the illusion that the picture is clearer than it actually is.[52] Thus, using a non-eyewitness's asserted degree of familiarity — which is incorrect if the image of the assailant is not actually an image of their husband, but of a stranger — to overcome image-quality issues impermissibly increases the risk of a false positive identification.

As with most evidentiary determinations, and specifically as with the admissibility of identifications, the question of whether the video is of sufficient-

Is the Identification Accurate? A Two-Prong Checklist

Prong One: Given the image quality, is there a reasonable probability of an accurate identification?

- **Consider:**
  - Image resolution.
  - Distance of the person to be identified from camera.
  - Lighting, viewpoint, camera angle.
  - Presence of a hat or other disguise.
  - Obstructions between the camera and the target person.
  - Whether the image is moving or still.
- **If there is no reasonable probability of an accurate identification, identification is not admissible.**
- **If there is a reasonable probability of an accurate identification, proceed to Prong Two.**

Prong Two: Considering the factors below, is the identification likely to be accurate?

- **Consider:**
  - The degree of familiarity.
  - The exposure duration of prior encounters with the person the non-eyewitness has identified.
  - Time delay between the last time the person identified was seen by the non-eyewitness and the identification.
  - Suggestiveness of information given prior to identification.
  - The level of confidence and whether it was collected appropriately.
- **Standards of admissibility:**
  - Under the lay opinion rule, an identification that is unlikely to be accurate is not helpful and therefore admissible.
  - Under due process identification jurisprudence, if there is substantial risk of misidentification, the identification is not admissible.

ly high quality to pass muster under this first prong will be assessed under the totality of the circumstances. Of course, one difficulty here is that bright-line operational measures of whether a video image is sufficiently clear are not available. However, the factors listed above are a significant improvement upon the "hopelessly obscured" standard, which is not only a very low bar but also gives no concrete information as to how that can be determined.

In addition, the above discussion of judgment bias suggests that judges are not clean slates when making the determination of whether the quality of the video is too low for an accurate identification to be made. However, given the roles of judges as finders of fact, this bias is baked in. While simply educating people about their cognitive biases does little to mitigate these biases,[53] there are interventions that can be taken to mitigate the effect of these biases. We suggest that, to combat this bias, judges should make the decision about video quality, and they should do so before they learn any information about the person attempting to make the identification or any other contextual information about the identification.[54]

After taking all the above factors into account, if the image is found to be of low quality, no identification based on that image should come in. An image can be low quality even if it is not "hopelessly obscured." As the science discussed above shows, identifications are more likely to be accurate when a clear face image is viewed. Without that clear face image, none of the other factors matter. In other words, *a face that cannot be clearly seen is not likely to be accurately identified.* Only if the first prong of this framework is satisfied should the admissibility inquiry advance to the second prong.

Prong Two: Relevant Situational Factors. These factors, pulled from the science above, have both independent and interactive effects on identification accuracy. They include the following:

- The degree of familiarity that the non-eyewitness has with the person he or she believes is depicted in the footage.
- The exposure duration of the non-eyewitness's prior encounter with the person he or she believes is depicted in the footage.
- The time delay between when the person the non-eyewitness believes is depicted in the footage was last seen and the time of the identification.
- Whether the non-eyewitness and the person the non-eyewitness believes is depicted in the footage are of the same race or ethnicity.
- The priming effect of crime details and description of the perpetrator that the non-eyewitness was told prior to viewing the video.
- The level of confidence expressed by the non-eyewitness at the time of the first identification, and whether the identification confidence was collected in the non-eyewitness's own words without any suggestive questioning by the officer.

With respect to the first factor, familiarity, it is important to consider that *familiarity varies along a continuum; it is not an all-or-none phenomenon.* This framework therefore replaces the principle that "any familiarity is sufficient for admissibility" with a nuanced framework that recognizes that not all familiarity is equal. In determining the degree of familiarity that the non-eyewitness has with the person the non-eyewitness believes is depicted in the footage, a list of factors should be assessed, including:

- How many times has the non-eyewitness seen the person she

believes is depicted in the footage previously?

- When did the non-eyewitness *most recently* encounter the person he believes is depicted in the footage?
- What was the nature and the context of this encounter?
- What was the duration of this encounter?
- What additional details can the non-eyewitness recall about this encounter, including who else was present?
- Prior to this most recent encounter, what was their previous encounter?
- Repeat these questions for each encounter claimed between the non-eyewitness and the person the non-eyewitness believes is depicted in the footage.

In sum, this two-prong framework would assist in the assessment of whether an identification by a non-eyewitness from evidence obtained from a video is likely to be accurate. Critically, this two-prong approach would also require courts to consider factors that are currently being ignored, including the impact of cross-race effects and the relevance of suggestibility in non-eyewitness identifications.

III. Putting It Together: Applying the Framework

Judges should use the framework when determining admissibility, and jurors should be informed of the framework when deciding whether to credit a non-eyewitness identification that has been admitted. Below we show how the framework should be applied in a hypothetical situation.

A burglary occurs in a residential complex. There is a surveillance camera at the front door. Residents are shown the video footage of a man entering the building and asked to identify him. None of the residents directly witnessed the burglary.

First, the quality of the video footage must be assessed. What is the resolution of the facial image? How high was the camera stationed relative to the face of the perpetrator? Is the person's face visible? If so, for how long? Is the person wearing a cap or sunglasses? If, considering these facts, under the totality of circumstances, the judge determines that the image is too low quality — blurry, grainy, far away, or with an obscured face — for there to be a reasonable probability that an accurate identification could be made, no resident's identification should be admitted.

If the footage depicts a person with a discernable face, then the judge must ask other questions to determine the admissibility of the video. Were the residents told that a burglary had occurred? Were they told what was stolen? If so, they might approach the identification expecting a certain person, perhaps with a history of stealing, or someone having an interest in the specific items stolen. Were they told that officers believed the perpetrator to be a visitor of a specific apartment? Worse, were the residents told which neighbor officers suspected and merely asked to "confirm" the identification? All this information would be suggestive, undermining the reliability of any identification.

The judge must also consider any degree of asserted familiarity. Vague assertions of "I've seen him around the building" should not be sufficient to ensure admissibility, especially in a large apartment complex. What about, "I saw him at a picnic in the park across the street"? For that response, a judge should consider how many people attended the event, how long ago the event occurred, and how long the non-eyewitness directly interacted with the suspect. The judge must also consider whether the identification is cross-racial.

In this scenario, given a high-resolution video camera that was placed close to the suspect whose face can be seen, some non-eyewitness identifications may be admissible, and some may not. The cross-race non-eyewitness identification of someone who claimed to have met the suspect once while visiting the resident of an apartment two years ago should not be admitted. The same-race non-eyewitness identification of someone who claims to have seen the suspect every Tuesday and Thursday at the dog park across the street for the last two years should be admitted. Still, the jury should be instructed to consider the two-prong framework when answering the ultimate question: Has the State proven beyond a reasonable doubt that the defendant was correctly identified?

Conclusion

As noted at the outset, eyewitness misidentifications are a leading cause of wrongful convictions in the United States. But how many wrongful convictions have resulted from non-eyewitness misidentifications? Although we do not have the answer to this question, there is cause for concern due to the scientific research documenting inaccuracies with the memory task required for non-eyewitness identifications. Yet, non-eyewitness identifications have proceeded on a separate jurisprudential track. Untouched by advances in scientific research, these identifications are only becoming increasingly prevalent in our surveillance world. From body-worn cameras to CCTVs, from Nest doorbells to smartphones ready at a moment's notice, more and more crimes are being captured on film. And under conditions of low-quality footage and minimal familiarity, witnesses are being brought to court to identify the defendants as the perpetrators. The accuracy of many of these identifications are dubious — as dramatically demonstrated by the exoneration of Ronnell Johnson, who was wrongly identified by his own father and aunt as being the perpetrator on surveillance footage.[55] And although the quality of the actual cameras are increasing, the factors described above — such as the distance from the camera to the person of interest, the angle of the camera,[56] and the presence of obstructions — can make even a high-quality video image ineffective at capturing a representation of a person that is likely to lead to an accurate identification.[57] The current standards are doing nothing to acknowledge, let alone meet, this problem.

The two-prong admissibility test that we propose will prevent judges from admitting into evidence what are likely to be the less reliable non-eyewitness identifications, instead admitting only those with sufficient indications of accuracy. As a guide to jurors, this two-prong approach will also help focus on the key factors that govern the accuracy of non-eyewitness identifications. A more stringent, scientifically sound standard is necessary to protect criminal defendants and to give us all more faith in convictions based on evidence from non-eyewitnesses.

Courts must meet this increase in non-eyewitness identifications with an understanding that they are, in fact, identifications that carry with them the same risks as the eyewitness identifications we have rightfully grown skeptical of. We should not have to wait decades to understand the errors of our ways, as we did before DNA exonerations revealed decades of wrongful incarcerations based on eyewitness misidentifications. We have the scien-

tific understanding to approach these identifications with more rigor now.

Authors' Note: This article is adapted from Kathy Pezdek & Tamar Lerer, *Let's Go to the Tape: Science-Based Standards for Non-Eyewitness Identifications in a Surveillance World*, 59 Crim. L. Bull. 1 (2023) (© 2023 Thomson Reuters/West)

Notes

1. *See* State v. Henderson, 27 A.3d 872 (N.J. 2011). *See also* State v. Kaneaiakala, 450 P.3d 761 (Haw. 2019); State v. Harris, 191 A.3d 119 (Conn. 2018); Young v. State, 374 P.3d 395 (Alaska 2016); Commonwealth v. Gomes, 22 N.E.3d 897 (Mass. 2015); State v. Almaraz, 301 P.3d 242 (Idaho 2013); State v. Guilbert, 49 A.3d 705 (Conn. 2012); State v. Lawson, 291 P.3d 673 (Or. 2012).

2. *See, e.g.*, Criminal Jury Instructions for New Jersey, *Identification — In and Out of Court Identifications* (Rev. May 18, 2020) (informing jury that "[e]yewitness identification evidence must be scrutinized carefully. Human beings have the ability to recognize other people from past experiences and to identify them at a later time, but research has shown that there are risks of making mistaken identifications."); Criminal Jury Instructions for Massachusetts, *Eyewitness Identification* (Nov. 16, 2015) (informing jury that "[p]eople have the ability to recognize others they have seen and to accurately identify them at a later time, but research and experience have shown that people sometimes make mistakes in identification. The mind does not work like a video recorder. A person cannot just replay a mental recording to remember what happened. Memory and perception are much more complicated.").

3. Neil v. Biggers, 409 U.S. 188, 199-200 (1972).

4. Emily West & Vanessa Meterko, *Innocence Project: DNA Exonerations, 1989-2014: Review of Data and Findings from the First 25 Years*, 79 Alb. L. Rev. 717, 737 (2016).

5. Kathy Pezdek, *Psychological Research on the Use of Body-Worn Cameras*, *in* 6 Advances in Psychology and Law (M.K. Miller & B.H. Bornstein eds.) (forthcoming 2022).

6. *Amazon's Ring Leads Google's Nest as 16% of US Homes Adopt Video Doorbells: Strategy Analytics*, Business Wire (Feb. 13, 2020), https://www.businesswire.com/news/home/20200213005824/en/Amazon%E2%80%99s-Ring-Leads-Google%E2%80%99s-Nest-As-16-Of-US-Homes-Adopt-Video-Doorbells-Strategy-Analytics.

7. For a thorough discussion of the concept of silent witness theory, see George Bach, *Moderating the Use of Lay Opinion Identification Testimony Related to Surveillance Video*, 48 Fla. St. U.L. Rev. 445, 449-50 (2020).

8. *See* Riana Pfefferkon, *"Deepfakes" in the Courtroom*, 29 B.U. Pub. Int. L.J. 245, 258 (2022) (reviewing means of authenticating digital evidence, including by an eyewitness who can testify that the digital evidence depicts the scene the witness saw accurately); *see generally* M.L. Cross, *Authentication or Verification of Photograph as Basis for Introduction in Evidence*, 9 A.L.R.2d 899 (2022) (collecting cases); Gregory T. Jones, *Lex, Lies & Videotape*, 18 U. Ark. Little Rock L.J. 613, 623 (1996) (discussing pictorial theory method of authentication).

9. For more information on the widespread concern about video forgery — and, in the extreme, cases of "deepfakes," *see, e.g.,* Daniel Victor, *Your Loved Ones, and Eerie Tom Cruise Videos, Reanimate Unease with Deepfakes*, N.Y. Times (Mar. 10, 2021), https://www.nytimes.com/2021/03/10/technology/ancestor-deepfake-tom-cruise.html. Technology now makes it easy to alter digital images, including videos, and then widely distribute these forged images electronically. Rohini Sawant & Manoj Sabnis, *A Review of Video Forgery and Its Detection*, 20 IOSR J. Comput. Eng'g 1, 1-3 (2018). What is especially troubling about these forgeries is that in many instances, given the credulity people display towards videos, they are likely to be accepted at face value and then difficult to correct.

10. A. Mike Burton et al., *Face Recognition in Poor-Quality Video: Evidence from Security Surveillance*, 10 Psych. Sci. 243, 243 (1999).

11. *Id.* at 251.

12. Karen Lander et al., *Evaluating the Effectiveness of Pixelation and Blurring on Masking the Identity of Familiar Faces*, 15 Applied Cognitive Psych. 101 107, 114 (2001).

13. *Id.* at 114; *see also* Talis Bachmann, *Identification of Spatially Quantised Tachistoscopic Images of Faces: How Many Pixels Does It Take to Carry Identity?*, 3 Eur. J. Cognitive Psych. 87, 96 (1991) (reporting that face recognition was significantly impaired when the spatial resolution was reduced below 18 pixels per face).

14. Geoffrey R. Loftus & Erin M. Harley, *Why Is It Easier to Identify Someone Close Than Far Away?*, 12 Psychonomic Bull. & Rev. 43, 61 (2005); *see also* Sharon Gilad-Gutnick et al., *Recognizing Degraded Faces: The Contribution of Configural and Featural Cues*, 41 Perception 1497 (2012) (reporting that reducing image resolution (i.e., systematically blurring the images) reduced the ability to detect changes in properties of faces — both featural (interior facial features such as eyes, nose, mouth) and configural (the metric distances among the featural features), suggesting that holistic processing of faces is disrupted in low-resolution images).

15. Lander et al., *The Role of Movement in Recognition of Famous Faces*, 27 Memory & Cognition 974, 983 (1999); *see also* Lander et al. (2001), *supra* note 12 at 114.

16. Harold Hill & Vicki Bruce, *The Effects of Lighting on the Perception of Facial Surfaces*, 22 J. Experimental Psych.: Human Perception & Performance 986 (1996).

17. Vicki Bruce et al., *Matching Identities of Familiar and Unfamiliar Faces Caught on CCTV Images*, 7 J. Experimental Psych. 207 (2001). Note that this was a matching task and thus did not involve memory.

18. *Id.* at 332; Jonathan P. Vallano et al., *Familiar Eyewitness Identifications: The Current State of Affairs*, 25 Psych., Pub. Pol'y & L. 128, 134 (2019).

19. *See, e.g.*, Amina Memon et al., *Exposure Duration: Effects on Eyewitness Accuracy and Confidence*, 94 British J. Psych. 339, 348 (2003). Kenneth R. Laughery et al., *Recognition of Human Faces: Effects of Target Exposure Time, Target Position, Pose Position, and Type of Photograph*, 55 J. Applied Psych. 477, 483 (1971). For a review of research on the effects of exposure time on face recognition memory, *see also* Brian H. Bornstein et al., *Effects of Exposure Time and Cognitive Operations on Facial Identification Accuracy: A Meta-analysis of Two Variables Associated with Initial Memory Strength*, 18 Psych. Crime & L. 473 (2012). For a review of this research, *see also* Peter N. Shapiro & Steven Penrod, *Meta-analysis of Facial Identification Studies*, 100 Psych. Bull. 139 (1986).

20. Kathy Pezdek & Stacia Stolzenberg, *Are Individuals' Familiarity Judgments Diagnostic of Prior Contact?*, 302 Psych. Crime & L. 302, 306 (2014); John R. Vokey & Don J. Read, *Typicality, Familiarity and the Recognition of Male and Female Faces*, 42 Canadian J. Psych. 489 (1988).

21. For a classic reference on effects of time delay on memory, *see generally* Hermann Ebbinghaus, Memory: A Contribution to Experimental Psych. (Henry A. Ruger & Clara E. Bussenius trans., Dover Publications 1964) (1885).

22. For a review of the research on the cross-race effect, see Christian Meissner & John Brigham, *Thirty Years of Investigating the Own-race Bias in Memory for Faces: A Meta-analytic Review*, 7 Psych. Pub. Pol'y. & L. 3 (2001).

23. Ahmend M. Megreya et al., *The Other-Race Effect Does Not Rely on Memory: Evidence from a Matching Task*, 64 Q.J. Experimental Psych. 1473 (2011).

24. For a review of this research, see Floris P. de Lange et al., *How Do Expectations Shape Perception?*, 22 Trends Cognitive Sci. 764 (2018).

25. *Id.* at 765.

26. John T. Wixted & Gary L. Wells, *The Relationship Between Eyewitness Confidence and Identification Accuracy: A New Synthesis*, 18 Psych. Sci. Pub. Int. 10, 55 (2017); *see also* John T. Wixted et al., *Test a Witness's Memory of a Suspect Only Once*, 22 Psych. Sci. Pub. Int. 1S (2021).

27. Michael R. Leippe, *The Appraisal of Eyewitness Testimony*, *in* Adult Eyewitness Testimony 385 (David F. Ross et al. eds., 1994); *see also* John C. Yuille, *We Must Study Forensic Eyewitnesses to Know About Them*, 48 Am. Psychologist 572 (1993).

28. Tanja R. Benton et al., *Eyewitness Memory Is Still Not Common Sense: Comparing Jurors, Judges and Law Enforcement to Eyewitness Experts*, 20 Applied Cognitive Psych. 115 (2006); *see also* A. Daniel Yarmey, *Perceived Expertness and Credibility of Police Officers as Eyewitnesses*, 10 Canadian Police Coll. J. 31 (1986).

29. For a review of this research, *see* Kathy Pezdek & D. Reisberg, *Psychological Myths About Evidence in the Legal System: How Should Scientists Respond?* 11 J. Applied Rsch. Memory & Cognition 143 (forthcoming 2022).

30. *See, e.g.*, State v. Fripp, 721 S.E.2d 465, 467-69 (S.C. Ct. App. 2012); United States v. White, 639 F.3d 331, 335-36 (7th Cir. 2011); People v. Sanchez, 95 A.D.3d 241, 249-50 (N.Y. App. Div. 2012), *aff'd*, 991 N.E.2d 698 (N.Y. 2013); State v. Barnes, 212 P.3d 1017, 1020-26 (Idaho Ct. App. 2009); United States v. Pierce, 136 F.3d 770, 774 (11th Cir. 1998); Rossana v. State, 934 P.2d 1045, 1048-49 (Nev. 1997); United States v. Borrelli, 621 F.2d 1092 (10th Cir. 1980); *Ex Parte* Rieber, 663 So. 2d 999, 1011-12 (Ala. 1995); State v. King, 883 P.2d 1024, 1036 (Ariz. 1994); Nooner v. State, 907 S.W.2d 677, 685 (Ark. 1995).

31. California v. Perry, 131 Cal. Rptr. 629 (Ct. App. 1976).

32. *Ibid.* Most evidence codes have similar standards for the admissibility of lay opinion testimony. *See* 29 Charles Alan Wright & Arthur R. Miller, Federal Practice and Procedure § 6251 (2d ed. 2022) (collecting state rules); F.R.E. 702.

33. *See, e.g.*, *Perry*, 131 Cal. Rptr. at 629.

34. It is beyond the scope of this article to address the special case of identifications by jurors. Briefly put, because there is no issue of memory or prior exposure to the perpetrator in this situation involving a jury, determination of a match between the defendant and the perpetrator would rely first and foremost on the quality of the video image. Moreover, the cross-race effect still applies in matching tasks, Megreya, *supra* note 23, and the information presented at a trial is likely to bias the jury's assessment of whether defendant is the perpetrator.

35. *See, e.g.*, People v. Leon, 352 P.3d 289, 312-13 (Cal. 2015) (allowing identification testimony of detective who had never seen defendant prior to the crimes or his arrest but had spent approximately two hours with him since); United States v. Beck, 418 F.3d 1008, 1015 (9th Cir. 2005) (probation officer's four contacts with defendant, each for 30 minutes or less, was sufficient for admissibility of testimony identifying defendant in surveillance photograph, as degree of familiarity goes to weight rather than to admissibility); Gibson v. State, 709 N.E.2d 11, 15-16 (Ind. Ct. App. 1999) (allowing non-eyewitness identification by an investigator for police department who was also a friend of the defendant's older brother and had known defendant since middle school and had seen him "a few times" since then); Robinson v. People, 927 P.2d 1996, 384 (Colo. 1996) (rejecting defendant's challenge to testimony of detective, who had seen defendant once, that defendant was depicted in surveillance photograph, as degree of familiarity goes to weight rather than to admissibility); *Thompson*, 49 N.E.3d at 408.

36. State v. Gore, 269 A.3d 1, 13-18 (Conn. 2022).

37. Glenn v. State, 806 S.E.2d 564, 568-69 (Ga. 2017).

38. *See, e.g.*, State v. Gardner, 955 S.W.2d 819, 823-25 (Mo. Ct. App. 1997) (non-eyewitness identification helpful to the jury because the tape was poor quality and defendant's face was obscured by his own arm); United States v. Allen, 787 F.2d 933, 936 (4th Cir. 1986) ("less than clear" quality of photographs, which provided only "limited glimpses" of individual depicted, rendered testimony of witnesses familiar with defendant more helpful to jury), *vacated on other grounds*, 479 U.S. 1077 (1987).

39. Lenoir v. State, 222 So.3d 273, 276-78 (Miss. 2017); State v. Robinson, 118 A.3d 242, 249 (Me. 2015); Sanders v. United States, 809 A.2d 584, 595 (D.C. 2002); Bennett v. State, 757 So. 2d 1074, 1076 (Miss. Ct. App. 2000); United States v. Jackman, 48 F.3d 1 (1st Cir. 1995).

40. It is important to note that even though the term "low quality" has been used to describe much of the surveillance video used in research studies, the quality of these videos is actually similar to that of current surveillance video systems used in, for example, convenience stores and street fronts.

41. State v. Gore, 342 Conn. 129, 158, 269 A.3d 1, 18 (2022).

42. *Ibid.* In *Gore* itself, the non-eyewitness had a "long-standing and intimate association with the defendant." *Id.* at 22. Because of this intimate familiarity and the quality of the

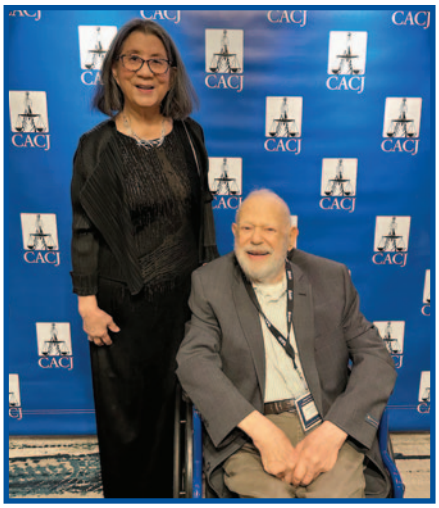
(Continued on page 41)

Ephraim Margolin Tribute

(Continued from page 10)

Ephraim's presence was felt in many different places. He was the first president of CACJ, NACDL's California affiliate, as well as the first chair of its Amicus Curiae Committee, where he cast a long shadow. I took over as the chair in 1992. It says a lot about Ephraim that for more than 30 years, lawyers have asked me if Ephraim might be available to write an amicus brief to help them on a case.

John Philipsborn



Vicki H. Young and Ephraim Margolin

I was honored when Ephraim asked me to work with him when I left the Federal Public Defender's Office. It seemed as if he was everyone's mentor — attorneys, judges, politicians, and everyday folk. I continually learned from him about the law and how to use it for good. His wisdom was matched by his compassion and generosity. His life was as inspiring as his intellect. He will be missed.

Vicki H. Young

Ephraim Margolin loved the law — not just the practice of the law, but law itself. It showed in the elegant construction of his briefs and in the piercing prose of his meticulous motion practice. When Ephraim spoke at board meetings, we were hushed, as he guided us toward a greater understanding of NACDL's role in society. Our joy that he was one of us must be weighed against our sorrow at his passing.

Larry Pozner ■

tions, will definitely be averring, "I couldn't do this sober."

Choosing the mode of trial with a "bad video" is a trickier endeavor. Consider the component parts such as walking to the curb, speech, and any stated physical problems. If, overall, these elements favor the client, defense counsel is probably better off arguing to a jury that the video denotes sobriety. Other circumstances that may favor choosing a jury trial are a client who presents himself as being cooperative or a client who inspires sympathy.

If defense counsel has a favorable judge or one who is aged or physically infirm, these same factors can also lead to choosing a bench trial.

13. Conclusion

Body-worn cameras, originally introduced for the protection of the police, are here to stay and bound to improve. Competent representation of people charged with alcohol-related operating offenses requires counsel to be aware of the various strategies that can be pursued in reference to the ever-present, ever-telling, and ofttimes damning electronic eye.

Notes

1. *See* People v. Odum, 31 N.Y.3d 344102 N.E.3d 103478 N.Y.S.3d 252 (2018).
2. *See* People v. Cruz, 48 N.Y.2d 419, 399 N.E.2d 513, 423 N.Y.S.2d 625 (1979).
3. *See* People v. Ardila, 85 N.Y.2d 846, 647 N.E.2d 1355, 623 N.Y.S.2d 847 (1995). ■

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Ed Fiandach is a DUI Board Certified Specialist. He is a former Regent and Dean of the National College for DUI Defense. Fiandach has authored several textbooks on DUI, including *Handling Drunk Driving Cases 2d* and *New York Driving While Intoxicated 1st, 2d, and 3d Edition.*

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NON-EYEWITNESS IDENTIFICATIONS

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photograph, which the trial court described as "not unmistakably clear, [but] the subject was close enough to the camera, and his face was visible enough, to allow for recognition[,]" the court held that the admission of the identification was not an abuse of discretion. *Ibid.*

43. *Id.* at 19.

44. *Id.* (alterations omitted) (quoting State v. Guilbert, 49 A.3d 705 (Conn. 2012)).

45. *Id.* at 21.

46. *Id.* at 21-22.

47. *Id.* at 19-20.

48. FED. R. EVID. 701(b); *See also* United States v. Calhoun, 544 F.2d 291, 292-94 (6th Cir. 1976).

49. Neil v. Biggers, 409 U.S. 188, 198 (1972).

50. Lander, *supra* note 12.

51. De Lange, *supra* note 24.

52. P. Rossel et al., *It Makes Sense, So I See It Better! Contextual Information About the Visual Environment Increases Its Perceived Sharpness*, 48 J. EXPERIMENTAL PSYCH.: HUMAN PERCEPTION & PERFORMANCE 331 (2022). Similar findings were reported by Gary Lupyan, *Objective Effects of Knowledge on Visual Perception*, 43 J. EXPERIMENTAL PSYCH.: HUMAN PERCEPTION & PERFORMANCE 794 (2017).

53. For a discussion, *see, e.g.,* DAN KAHNEMAN, THINKING, FAST AND SLOW 189 (2011).

54. This is akin to sequential unmasking, which has been proposed as a general approach for minimizing cognitive bias in the forensic context. For a discussion of this approach, *see* Itiel E. Dror & Jeff Kukucka, *Linear Sequential Unmasking — Expanded (LSU-E): A General Approach for Improving Decision Making as Well as Minimizing Noise and Bias*, 3 FORENSIC SCI. INT'L: SYNERGY (2021).

55. *Ronnell Johnson*, NAT'L REGISTRATION OF EXONERATIONS (June 22, 2022), https://www.law.umich.edu/special/exoneration/Pages/casedetail.aspx?caseid=6321. For cases in which a court held that the low quality of the image supported its admission, *see, e.g.*, State v. Gardner, 955 S.W.2d 819, 823-25 (Mo. Ct. App. 1997) (non-eyewitness identification helpful to the jury because the tape was poor quality and defendant's face was obscured by his own arm); United States v. Allen, 787 F.2d 933, 936 (4th Cir. 1986) ("less than clear" quality of photographs, which provided only "limited glimpses" of individual depicted, rendered testimony of witnesses familiar with defendant more helpful to jury), *vacated on other grounds*, 479 U.S. 1077 (1987).

56. Surveillance cameras are often positioned high on buildings, likely to capture the broadest possible view and avoid equipment theft. See DEP'T OF HOMELAND SECURITY, CCTV TECHNOLOGY HANDBOOK 25 (2013), https://www.dhs.gov/sites/default/files/publications/CCTV-Tech-HBK_0713-508.pdf ("Placement of the camera needs to be high enough to prevent tampering, while positioned appropriately for the intended FOV.").

57. Further, people have trouble accurately identifying people unfamiliar to them even from high-quality images. Vicki Bruce et al., *Verification of Face Identities from Images Captured on Video*, 5 J. EXPERIMENTAL PSYCH. 339, 342 (1999) (people shown high-quality, full-front view of a person correctly matched that person to a photograph in a 10-person lineup only 30% of the time). ■

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