WHY JUDGES SHOULD ADMIT EXPERT TESTIMONY ON THE UNRELIABILITY OF EYEWITNESS TESTIMONY

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Abstract

Although most researchers have found general consistency in the ways in which courts have applied *Daubert* to social scientific evidence, one of the major areas of inconsistency concerns rulings on the admissibility of expert testimony about unreliability of eyewitness identifications. This article argues for a harmonization of this inconsistency by taking the minority approach to the issue: allowing such expert testimony. In support of the argument, the article summarizes the psychological literature on perception and memory (including both estimator variables and systemic variables) in the context of eyewitness identifications. The article then examines the inconsistent treatment of this research by the courts, asserting that courts often misunderstand the relevant psychological literature, thereby unwittingly contributing to wrongful convictions. The article ends by making legal and policy recommendations that expert testimony on eyewitness identifications be admissible under the rules of evidence.

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By Henry F. Fradella[*]

I. INTRODUCTION

[1] In 1998, Herman Atkins was wrongfully convicted of aggravated rape and robbery in California. His accuser mistakenly identified him as the person who raped her at gunpoint while she worked in a shoe store. The rape victim did not identify Atkins

> until after she was taken to a police station briefing room, where she saw a wanted poster for him on unrelated charges. After seeing the wanted poster, she was shown a photo lineup and identified Atkins as her assailant. A witness who worked at the store next to where the rape occurred was shown the wanted poster with Atkins's picture and identified him as a man who had been in her store earlier that day.[1]

At his trial, Atkins presented an alibi witness and testified on his own behalf. Forensic serological testing could not exclude Atkins as the perpetrator, but did not pinpoint him either. He served more than eleven years of a forty-five year sentence, and was released from prison only after The Innocence Project accepted his case and, through DNA testing, proved Atkins was not the perpetrator of the crime.[2]

[2] Atkins' case is only one of 125 cases in the U.S. in which The Innocence Project has used post-conviction DNA evidence to exonerate someone wrongfully convicted of a crime because of mistaken eyewitness identification.[3] These cases provide strong evidence that the phrase "seeing is believing" is not only ubiquitous common parlance, but also appears to be

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[1] The Innocence Project, *Case Profile: Herman Atkins*, *available at* http://www.innocenceproject.org/case/display_profile.php?id=70 (last visited March 5, 2006).

[2] *Id.*

[3] The Innocence Project, *Mistaken Eyewitness Identifications*, *available at* http://www.innocenceproject.org/causes/mistakenid.php (last visited March 5, 2006) [hereinafter "Mistaken I.D."].

gospel to jurors. Juries accept this adage as a truism when they consider the testimony of an eyewitness. But, as the cases of Herman Atkins and more than a hundred other defendants illustrate, there are serious problems with the accuracy of eyewitness identifications. It is time judges took note, as they may have serious misunderstandings about the unreliability of eyewitness identifications.[4]

[3] Unreliability of eyewitness identification testimony may have many causes. First, of course, it is possible that an eyewitness is lying. Concerns about the truthfulness of what someone alleges to have seen can be traced back to the time of Moses: "Thou shalt not bear false witness against thy neighbour."[5] Yet, juries are expected to assess the veracity of all witnesses, and cross-examination is presumed to reveal when eyewitnesses have motivation to lie, just as it would with any other witness. The more troubling situation is the eyewitness who honestly believes his or her testimony is the truth, but is incorrect. Even back in Ancient Greece, Plato cautioned, "have sight and hearing any truth in them? Are they not, as the poets are always telling us, inaccurate witnesses?"[6]

[4] There is no truly accurate way to know how frequently mistaken identifications result in wrongful convictions. But, decades of research on the topic have consistently found that mistaken identification is the leading cause of wrongful convictions.[7] In fact, it is so common that it practically rivals the sum of all other errors that lead to wrongful conviction.[8] For example, between seventy-five and eighty-five percent of the convictions overturned by

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[4] Tanja Rapus Benton, David F. Ross, Emily Bradshaw, W. Neil Thomas & Gregory S. Bradshaw, *Eyewitness Memory Is Still Not Common Sense: Comparing Jurors, Judges and Law Enforcement to Eyewitness Experts,* 20 APPLIED COGNITIVE PSYCHOL. 115 (2006); Richard A. Wise & Martin A. Safer, *What U.S. Judges Know and Believe about Eyewitness Testimony*, 18 APPLIED COGNITIVE PSYCHOL. 427 (2004).

[5] Exodus 20:16 (King James).

[6] PLATO, PORTRAIT OF SOCRATES, BEING THE APOLOGY, CRITO, AND PHAEDO OF PLATO 99 (R.W. Livingstone, ed., Oxford Univ. Press 1938).

[7] William David Gross, *The Unfortunate Faith: A Solution to the Unwarranted Reliance Upon Eyewitness Testimony*, 5 TEX. WESLEYAN L. REV. 307, 313 (1999) (*citing* SIEGFRIED L. SPORER ET AL., PSYCHOLOGICAL ISSUES IN EYEWITNESS IDENTIFICATION 3 (1966)); *see also* Aldert Vrij, *Psychological Factors in Eyewitness Testimony*, *in* PSYCHOLOGY AND LAW: TRUTHFULNESS, ACCURACY, AND CREDIBILITY 105-19 (Amina Memon, Alder Vrij & Ray Bull eds., McGraw–Hill 1998); C. RONALD HUFF, ARYE RATTNER & EDWARD SAGARIN, CONVICTED BUT INNOCENT: WRONGFUL CONVICTION AND PUBLIC POLICY 66, 83-104 (Thousand Oaks, CA: Sage Publications 1996).

[8] *See* Arye Rattner, *Convicted But Innocent: Wrongful Conviction and the Criminal Justice System*, 12 LAW & HUM. BEHAV. 283, 287-91 (1988).

DNA evidence have involved a mistaken eyewitness.[9] This is likely due to the fact, as the Supreme Court has observed, that "despite its inherent unreliability, much eyewitness identification evidence has a powerful impact on juries . . . . All evidence points rather strikingly to the conclusion that there is almost nothing more convincing than a live human being who takes the stand, points a finger at the defendant, and says, 'That's the one!'"[10] Yet, studies have repeatedly shown a roughly forty percent rate of mistaken identifications.[11] In spite of this, nearly 80,000 suspects are targeted every year based on an eyewitness identification.[12]

[5] Given the many of causes of misidentification, the United States Supreme Court has held that identifications that occur under questionable circumstances should not be admitted at trial. "[R]eliability is the linchpin in determining the admissibility of identification testimony. . . ."[13] The Supreme Court's demand for reliability in identification procedures is a result of its conclusion that "the vagaries of eyewitness identification are well-known; the annals of criminal law are rife with instances of mistaken identification."[14] To prevent such misidentifications, the Court in *Manson v. Brathwaite* reiterated its belief in the criteria for examining the reliability of identifications set down in *Neil v. Biggers*.[15] The criteria includes "the opportunity of the witness to view the criminal at the time of the crime, the witness' degree of attention, the accuracy of the witness' prior description of the criminal, the level of certainty demonstrated by the witness at

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[9] *Compare* Mistaken I.D., *supra* note 3 (reporting that 125 of 163, or 76.69%, of post-conviction DNA exonerations in the U.S. involved mistaken eyewitness identification) *with* BARRY SCHECK, PETER NEUFELD & JIM DWYER, ACTUAL INNOCENCE: FIVE DAYS TO EXECUTION, AND OTHER DISPATCHES FROM THE WRONGLY CONVICTED (2000) (mistaken eyewitnesses factor in 84% of 67 wrongful convictions); Edward Connors, Thomas Lundregan, Neal Miller & Tom McCain, Convicted by Juries, Exonerated by Science: Case Studies in the Use of DNA Evidence to Establish Innocence after Trial (Department of Justice, 1996) (86% of 28 cases studied involved mistaken eyewitness identification) *available at* http://www.ncjrs.gov/txtfiles/dnaevid.txt (last visited May 31, 2006).

[10] Watkins v. Sowders, 449 U.S. 341, 352 (1981).

[11] Vrij, *supra* note 7, at 106.

[12] A.G. Goldstein, J.E. Chance & G.R. Schneller, *Frequency of Eyewitness Identification in Criminal Cases: a Survey of Prosecutors,* 27 BULL. PSYCHOL. SOC'Y 71-74 (Jan. 1989).

[13] Manson v. Brathwaite, 432 U.S. 98, 114 (1977).

[14] *Id.* at 119 (*quoting* United States v. Wade, 388 U.S. 218, 228 (1967)).

[15] 409 U.S. 188, 199-200 (1972).

the confrontation, and the length of time between the crime and the confrontation."[16] While all of these legal factors seem straight-forward enough, in reality, they depend on complex psychological issues pertaining to perception and memory. Cases involving questionable eyewitness identifications under *Brathwaite* and *Biggers* cry out for the assistance of expert witnesses. For this reason, this Article is devoted to explaining why courts must change their traditional hostility to expert testimony on the unreliability of eyewitness testimony.

II. BIO-PSYCHO-SOCIAL FACTORS INFLUENCING MEMORY

[6] The great majority of courts appear to be unfamiliar with the many bio-pscyho-social factors that affect memory, and consequently affect the reliability of eyewitness identifications. This section is devoted to familiarizing the reader with the numerous and complex factors that affect memory.

A. PERCEPTION

[7] Putting aside the issue of intentional deception, inaccuracy of eyewitness testimony stems from the fact that memories are not exact recordings of events.[17] First and foremost, memory is dependent on perception. We tend to think of perception in terms of our basic senses—sight, hearing, touch, taste, and smell. But perception is really a process—"the total amalgam of sensory signals received and then processed by an individual at any one time."[18] This process is highly selective and is as dependent upon psychological factors as it is on physical senses because it is an "interpretive process."[19] The "actual" sensory data we perceive is "processed in light of experience, learning, preferences, biases, and expectations."[20]

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[16] *Id.*

[17] Peter J. Cohen, *How Shall They Be Known? Daubert v. Merrell Dow Pharmaceuticals and Eyewitness Identification*, 16 PACE L. REV. 237, 242 (1996); *see generally* Richard C. Atkinson & Richard M. Shiffrin, *Human Memory: A Proposed System and its Control Processes*, *in* 2 KENNETH W. SPENCE & JANET T. SPENCE, THE PSYCHOLOGY OF LEARNING AND MOTIVATION: ADVANCES IN RESEARCH AND THEORY 89-195 (Academic Press, 1968).

[18] Steven I. Friedland, *On Common Sense and the Evaluation of Witness Credibility*, 40 CASE W. RES. L. REV. 165, 181 (1990); *see generally* STANLEY COREN, LAWRENCE M. WARD & JAMES T. ENNS, SENSATION AND PERCEPTION 356 (6th ed. 2003).

[19] Robert Buckhout, *Psychology and Eyewitness Identification*, 2 LAW & PSYCHOL. REV. 75, 76 (1976); *see also* Friedland,, *supra* note 18; Coren et al., *supra* note 18.

[20] Frederick E. Chemay, *Unreliable Eyewitness Evidence: The Expert Psychologist and the Defense in Criminal Cases*, 45 LA. L. REV. 721, 724 (1985); *see also* Fredrik H. Leinfelt, *Descriptive Eyewitness Testimony: The Influence of Emotionality, Racial Identification, Question Style, and Selective Perception*, 29 CRIM. JUST. REV. 317 (2004).

[8] One of the most important factors affecting our ability to perceive is the volume of sensory stimulation. "Perception is highly selective because the number of signals or amount of information impinging upon the senses is so great that the mind can process only a small fraction of the incoming data."[21] This means we focus on certain stimuli while filtering out others. This results not only in incomplete acquisition of sensory data, but also in differential processing (i.e., interpretation) of events.[22] Even when lighting and distance conditions are good for observation, a person may still experience incomplete acquisition if he or she is "overwhelmed with too much information in too short a period of time,"[23] a function of differential processing referred to as *sensory overload.*

[9] Another important factor affecting perception is how humans fill gaps caused by incomplete sensory acquisition.[24] When these gaps are filled, the details often fit logically, but inaccurately.[25] The type of stimuli involved also affects perception. In particular, people are poor perceivers of duration (we tend to over-estimate how long something takes), time (it "flies by" or "drags on"), speed, distance, height, and weight.[26] It is important to keep in mind that people are not aware of their individual variations in the process of perception. In other words, how we perceive and synthesize sensory data are unconscious processes.

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[21] Friedland, *supra* note 18, at 181 (*quoting* Chemay, *supra* note 20, at 723); *see generally* Nelson Cowan, *The Magical Number 4 in Short-Term Memory: A Reconsideration of Mental Storage Capacity*, 24 BEHAV. & BRAIN SCI. 87 (2000) (discussing sensory overload as one of the many factors that affect perception and memory).

[22] *See* CURT R. BARTOL & ANNE M. BARTOL, PSYCHOLOGY AND LAW 219 (2d ed. 1994).

[23] Chemay, *supra* note 20, at 726.

[24] *Id.*

[25] *Id.* at 724 (*citing* Buckhout, *supra* note 19, at 5, 6); *see generally* Andrew Roberts, *The Problem of Mistaken Identification: Some Observations on Process*, 8 INT'L J. EVIDENCE & PROOF 100 (2004).

[26] Friedland, *supra* note 18, at 181 (*citing* ELIZABETH F. LOFTUS, EYEWITNESS TESTIMONY 22 (1979)).

B. THE THREE PHASES OF MEMORY

[10] Memory, like perception, is an unconscious process.[27] It is dependent upon three critical stages—acquisition/encoding, retention, and recall/retrieval. All three steps are affected by a number of physical and psychological factors that can taint the accuracy of a memory.[28] Even someone's mood can taint accuracy of a memory.[29] Yet, juries often fail to comprehend the complexities of memory when assessing the testimony of an eyewitness, which can, in turn, lead to conviction of an innocent person.

1. ACQUISITION PHASE

[11] The first stage in the development of memory is the acquisition, or encoding, stage. During this first stage in the development of memories, sensory data, as perceived by the individual, are encoded in the appropriate areas of the cerebral cortex.[30] Accordingly, the acquisition of memories is dependent upon perception. Since perception itself is a process dependent on a number of individualized factors, this stage in the process of developing memories is affected by those same factors. Sensory overload is particularly important since it can lead to so many gaps in memory that *confabulation*—"the creation or substitution of false memories through later suggestion"[31] —can occur.

[12] Perceptual variability aside, there is another important factor that affects memory acquisition. A person's expectations influence the way in which details about an event are encoded. An observer tends to seek out some information and avoid other information, an effect

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[27] Friedland, *supra* note 18, at 182; Chemay, *supra* note 20, at 724.

[28] Cohen, *supra* note 17, at 242-43.

[29] Joseph P. Forgas, Simon M. Laham & Patrick T. Vargas, *Mood Effects on Eyewitness Memory: Affective Influences on Susceptibility to Misinformation*, 41 J. EXPERIMENTAL SOC. PSYCHOL. 574 (2005).

[30] *See generally* Ralph N. Haber & Lyn Haber, *Experiencing, Remembering and Reporting Events: The Cognitive Psychology of Eyewitness Testimony*, 6 PSYCHOL. PUB. POL'Y & L. 1057 (2000).

[31] Chemay, *supra* note 20, at 726; *see also* Giuliana A.L. Mazzoni, L. Manila Vannucci & Elizabeth F. Loftus, *Misremembering Story Material*, 4 LEGAL & CRIMINOLOGICAL PSYCHOL. 93 (1999).

called the *confirmation bias*.[32] What gets encoded is, therefore, partially dependent on that for which the observer was looking.

2. RETENTION PHASE

[13] The retention, or storage, phase follows the encoding phase in the memory process. During this phase, the brain stores the memory until it is called upon for retrieval. How much data is being encoded and retained obviously affects this phase. The greater the amount of data presented, especially in shorter periods of time, the less that will be retained. The other obvious factor is the retention interval—how much time passes between storage of the memory and retrieval of it. But a third, far less obvious factor than the amount of data or the retention interval, has the most potentially negative effect on memory retention: the *post-event misinformation effect*. Exposure to subsequent information affects the way in which memories are retained.[33] Therefore, exposure to post-event misinformation can lead to an eyewitness accepting misinformation as if it were an accurate account.[34]

> For example, a witness to a traffic accident may later read a newspaper article which stated that the driver had been drinking before the accident. "Post-event information can not only enhance existing memories but also change a witness' memory and even cause nonexistent details to become incorporated into a previously acquired memory." When witnesses later learn new information which

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[32] D. Michael Risinger, Michael J. Saks, William C. Thompson & Robert Rosenthal, *The Daubert/Kumho Implications of Observer Effects in* Forensic Science: Hidden Problems of Expectation and Suggestion, 90 CAL. L. REV. 1, 7 (2002); *see also* Karl Ask & Pär Anders Granhag, *Motivational Sources of Confirmation Bias in Criminal Investigations: The Need for Cognitive Closure*, 2 J. INVESTIGATIVE. PSYCHOL. & OFFENDER PROFILING 43 (2005); Greg O. Niemeyer, *The Function of Stereotypes in Visual Perception*, 106 DOCUMENTA OPHTHALMOLOGICA 61 (Jan. 2003); John M. Darley & Paget H. Gross, *A Hypothesis-Confirming Bias in Labeling Effects*, 44 J. PERSONALITY & SOC. PSYCHOL. 20 (1983); Anthony G. Greenwald, *The Totalitarian Ego: Fabrication and Revision of Personal History*, 35 AM. PSYCHOLOGIST 603, 606 (1980).

[33] Cohen, *supra* note 17, at 246 (*citing* Loftus, *supra* note 26, at 35, 54); *see also* Helen M. Patterson & Richard I. Kemp, *Co-witnesses Talk: A Survey of Eyewitness Discussion,*12 PSYCHOL. CRIME & L. 181 (2006); Carl Martin Allwood, Jens Knutsson & Pär Anders Granhag, *Eyewitnesses Under Influence: How Feedback Affects the Realism in Confidence Judgements*, 12 PSYCHOL., CRIME & L. 25 (2006).

[34] *See generally* John C. Brigham, Adina W. Wasserman & Christian A. Meissner, *Disputed Eyewitness Identification Evidence: Important Legal and Scientific Issues*, 36 CT. REV. 12, 15 (1999); *see also* Patterson & Kemp, *supra* note 33; Allwood, et al., *supra* note 33; John S. Shaw, Sena Garven & James M. Wood, *Co-Witness Information Can Have Immediate Effects on Eyewitness Memory Reports*, 21 LAW & HUM. BEHAV. 503 (1997); Felicity Jenkins & Graham Davies, *Contamination of Facial Memory through Exposure to Misleading Composite Pictures*, 70 J. APPLIED PSYCHOL. 164 (1985).

conflicts with the original input, many will compromise between what they saw and what they were told later on.[35]

3. RETRIEVAL PHASE

14] Finally, the retrieval phase occurs when "the brain searches for the pertinent information, retrieves it, and communicates it."[36] This process necessarily occurs when eyewitnesses describe what they observed to police, when they participate in lineup or photo array identifications, and when they testify in court. Time is a very important factor in memory retrieval. As a rule, the longer the time period between acquisition, retention, and retrieval, the more difficulty we have retrieving the memory.[37]

[15] In addition to the passage of time, it has been repeatedly demonstrated that retrieval of memories can be affected by a process known as *unconscious transference*. In this phenomenon, different memory images may become combined or confused with one another.[38] This can manifest itself when an eyewitness, accurately recalling an innocent bystander at the scene of a crime, incorrectly identifies that bystander as the perpetrator.[39]

C. ESTIMATOR VARIABLES (NON-SYSTEMIC VARIABLES) IMPACTING PERCEPTION AND MEMORY

[16] In addition to the perceptual differences discussed earlier, memory is also impacted by a number of phenomena that collectively are referred to as *estimator variables*—those variables over which the criminal justice system has no control. Estimator variables can be

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[35] Cohen, *supra* note 17, at 246-47.

[36] Chemay, *supra* note 20, at 725 (*quoting* CURT BARTOL, PSYCHOLOGY AND AMERICAN LAW 171 (1983); *see also* Haber & Haber, *supra* note 30; BARTOL & BARTOL, *supra* note 22, at 219).

[37] BARTOL & BARTOL, *supra* note 22, at 220.

[38] Brigham, et al., *supra* note 34, at 15; *see also* Mark R. Phillips, R. Edward Geiselman, David Haghighi & Cynthia Lin, *Some Boundary Conditions for Bystander Misidentification*, 24 CRIM. JUST. & BEHAV. 370-90 (1997); R. Edward Geiselman, David Haghighi & Ronna Stown, *Unconscious Transference and Characteristics of Accurate and Inaccurate Eyewitnesses*, 2 PSYCHOL., CRIME & L. 197 (1996); Elizabeth F. Loftus, *Unconscious Transference*, 2 LAW & PSYCHOL. REV. 93 (1976).

[39] Timothy J. Perfect & Lucy J. Harris, *Adult Age Differences in Unconscious Transference: Source Confusion or Identity Blending*?, 31 MEMORY & COGNITION 570 (2003); Christian A. Meissner, Self-Generated Misinformation: the Influence of Retrieval Processes in Verbal Overshadowing (1998) (unpublished master's thesis, Florida State University); J. Don Read, Patricia Tollestrup, Richard Hammersley & Eileen McFadzen, *The Unconscious Transference Effect: Are Innocent Bystanders Ever Misidentified?* 4 APPLIED COGNITIVE PSYCHOL. 3 (1990).

broken down into two categories: "event factors" and "witness factors." Event factors include "lighting conditions, changes in visual adaptation to light and dark, duration of the event, speed and distance involved, and the presence or absence of violence."[40] Witness factors include stress, fear, physical limitation on sensory perception (e.g., poor eyesight, hearing impairment, alcohol or drug intoxication), expectations, age (the very young and very old have unique problems), and gender.[41]

1. TIME AS AN EVENT FACTOR

[17] Both common sense and our own experience inform us about temporal effects on memory. First and foremost, the longer one has to examine something, the better the memory formation will be and the more accurate recall will be.[42] Conversely, the less time someone has to witness an event, the less complete, and therefore less accurate, both perception and memory will be.[43] Closely related to the duration of time for observation is the rate at which events happen. Given the limitations of human perception, when things happen very quickly, memory can be negatively affected. This is true even when an eyewitness has a reasonable period of time to observe an event, since attention is focused on processing a fast-moving series of events, rather than on a particular aspect of the occurrence.[44]

[18] We all know that memory declines over time. Research has confirmed that time delay impacts the accuracy of identification, but to a much smaller degree than might be expected.[45] This may be due to the fact that memory does not fade away in increments over time, but rather fades fairly rapidly immediately following the event—a phenomenon referred to as the

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[40] Cohen, *supra* note 17, at 242 (*citing* Elizabeth F. Loftus et al., *The Psychology of Eyewitness Testimony, Psychological Methods*, *in* CRIMINAL INVESTIGATION AND EVIDENCE 6-13 (David C. Raskin ed., 1989); *see also* Haber & Haber, *supra* note 30; *see generally*, BRIAN L. CUTLER & STEPHEN D. PENROD, MISTAKEN IDENTIFICATIONS: THE EYEWITNESS, PSYCHOLOGY, AND LAW (New York: Cambridge Univ. Press, 1995).

[41] *Id.* (*citing* ELIZABETH LOFTUS & JAMES M. DOYLE, EYEWITNESS TESTIMONY: CIVIL AND CRIMINAL 36, 45 (2d ed. 1992)); *see also* Haber & Haber, *supra* note 30; CUTLER & PENROD, *supra* note 40.

[42] Amina Memon, Lorraine Hope & Ray Bull, *Exposure Duration: Effects on Eyewitness Accuracy and Confidence*, 94 BRITISH J. PSYCHOL. 339 (2003); BARTOL & BARTOL, *supra* note 22, at 220 (*citing, inter alia,* Geoffrey R. Loftus, *Eye Fixations and Recognition Memory*, 3 COGNITIVE PSYCHOL. 164-66 (1979)); Stephen D. Penrod, Elizabeth F. Loftus & J.D. Winkler, *The Reliability of Eyewitness Testimony: A Psychological Perspective*, *in* THE PSYCHOLOGY OF THE COURTROOM 119 (Norbert L. Kerr & Robert M. Bray eds., 1982).

[43] *See* BARTOL & BARTOL, *supra* note 22; Memon, et al., *supra* note 42; Penrod, et al., *supra* note 42.

[44] BARTOL & BARTOL, *supra* note 22, at 221; Haber & Haber, *supra* note 30, at 1060.

forgetting curve.[46] After the initial fade, there is a greater likelihood of confabulation. Such filling and/or alteration of memory by post-event discussions has a much more powerful negative impact on the accuracy of recall than does the passage of time alone.[47]

2. EVENT SIGNIFICANCE AND VIOLENCE AS EVENT FACTORS

[19] Overall event significance plays a significant role in the accuracy of memory recall. When people fail to perceive that a significant event is transpiring, their attention is not focused on the event, and the lack of attention leads to poorer perception and memory of the event.[48] But, when people are aware that a significant event is taking place, their attention is better focused and, correspondingly, perception and memory of the event is improved.[49] In terms of eyewitness accuracy, this often translates into high levels of inaccuracy in identifications for the perpetrator of a petty theft, and higher rates of accuracy for a more significant non-violent crime.[50]

[20] The use of the limiting phrase "non-violent crime" in the previous sentence is important because the seriousness of the crime in and of itself is not a determinative factor of event significance and the corresponding attention being paid to the event. The violence level of the crime is also important. Even when witnesses understand that they are watching a significant event, "the more violent the act, the lower will be the accuracy and completeness of perception and memory."[51] This is a function of the negative impact high levels of arousal and stress can produce.

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[45] Vrij, *supra* note 7, at 111.

[46] Friedland, *supra* note 18, at 183 (*citing* LOFTUS, *supra* note 26, at 53; H. EBBINGHAUS, MEMORY: A CONTRIBUTION TO EXPERIMENTAL PSYCHOLOGY (1964)); *see also* Haber & Haber, *supra* note 30, at 1060-61; *see generally* Sverker Sikstrom, *Forgetting Curves: Implications for Connectionist Models*, 45 COGNITIVE PSYCHOL. 95 (2002).

[47] *Id.* (*citing* LOFTUS, *supra* note 26, at 54-78); Penrod, Loftus & Winkler, *supra* note 42, at 134-38; Haber & Haber, *supra* note 30.

[48] *See* Michael R. Leippe, Gary L. Wells & Thomas M. Ostrom, *Crime Seriousness as a Determinant of Accuracy in Eyewitness Identification*, 63 J. APPLIED PSYCHOL. 345-51 (1978) (the more serious the crime, the more likely the witness will identify the correct criminal).

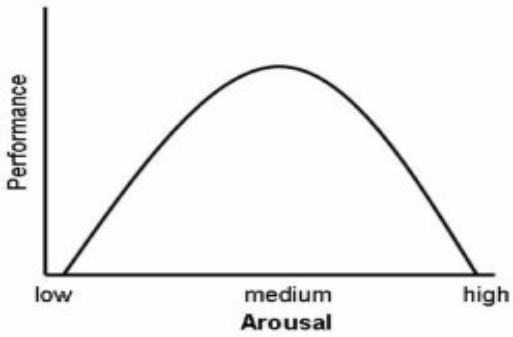
[49] *Id.*; *see also* Chemay, *supra* note 20, at 728.

[50] Chemay, *supra* note 20, at 728.

3. AROUSAL AND STRESS AS EVENT FACTORS

[21] Contrary to the popular belief that stress heightens perception and memory, research suggests that perception and memory acquisition function most accurately when the subject is exposed to a moderate amount of stress.[52] This is often referred to as the *Yerkes-Dodson Law* which holds that when stress levels are too low, people do not pay sufficient attention, and when stress levels are too high, the ability to concentrate and perceive are negatively impacted.[53]

Figure 1: Yerkes-Dodson Arousal Curve



[51] *Id.* (*citing* Clifford, *Eyewitness Testimony: The Bridging of a Credibility Gap*, *in* PSYCHOLOGY, LAW AND LEGAL PROCESSES 167, 176-77 (David P. Farrington, Keith Hawkins, Sally M. Lloyd-Bostock eds., 1979)).

[52] *Eyewitness Testimony, in* Psychology, Law and Legal Process, *supra note 51*, at 243 (*citing* LOFTUS, *supra* note 26, at 33); *see also* Linda S. Katz & J. Reid, *Expert Testimony on the Fallibility of Eyewitness Identification*, 1 CRIM. JUST. J. 177, 184-86 (1977).

[53] Robert M. Yerkes & J.D. Dodson, *The Relation of Strength of Stimulus to Rapidity of Habit Formation*, 18 J. COMP. NEUROLOGY & PSYCHOL., 459-82 (1908); Elizabeth F. Loftus, *Ten Years in the Life of an Expert Witness*, 10 LAW & HUM. BEHAV. 241, 254-55 (1986).

[22] The Yerkes-Dodson law has a strong effect on people's ability to perceive and remember certain details of an event. Detail significance refers to the minutia of a crime scene, as opposed to its overall significance. When people are concerned about personal safety, they tend to focus their attention on the details that most directly affect their safety, such as "blood, masks, weapons, and aggressive actions."[54] While focusing on these details, they pay less attention to the other details of the crime scene, such as characteristics of the perpetrator (e.g., facial features, hair color and style, clothing, height, weight, etc.), the crime scene, and other important details.[55] This phenomenon manifests itself particularly when a weapon is present.[56] The so-called *weapons effect* describes crime situations in which a weapon is used and witnesses spend more time and psychic energy focusing on the weapon rather than on other aspects of the event.[57] The weapons effect results in incomplete or inaccurate information about the crime scene and the perpetrator.[58] This effect is magnified when the use of a weapon comes as a surprise to a witness.[59]

4. EXPECTANCIES AND STEREOTYPES AS WITNESS FACTORS

[23] "A person's expectations and stereotypes can also affect both perception and memory: what he perceives and encodes is, to a large extent, determined by cultural biases, personal prejudices, effects of training, prior information, and expectations induced by motivational states, among others."[60] Whether the hunter is looking for deer, or one is searching

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[54] BARTOL & BARTOL, *supra* note 22, at 221.

[55] *E.g.,* Kenneth A. Deffenbacher, Brian H. Bornstein, Steven D. Penrod & E. Kiernan McGorty, *A Meta-Analytic Review of the Effects of High Stress on Eyewitness Memory*, 28 LAW & HUM. BEHAV. 687 (2004); Charles A. Morgan, et al., *Accuracy of Eyewitness Memory for Persons Encountered during Exposure to Highly Intense Stress*, 27 INT'L J.L. & PSYCHIATRY 265 (2004).

[56] Deffenbacher, et al., *supra* note 55; Morgan, et al., *supra* note 55; Kerri L. Pickel, *The Influence of Context on the "Weapon Focus" Effect*, 23 LAW & HUM. BEHAV. 299 (1999).

[57] Cohen, *supra* note 17, at 244 (*citing* Loftus & Doyle, *supra* note 41, at 34).

[58] Nancy Mehrkens Steblay, *A Meta-Analytic Review of the Weapon Focus Effect*, 16 LAW & HUM. BEHAV. 413 (1992); ELIZABETH F. LOFTUS, EYEWITNESS TESTIMONY 35-36 (2d ed. 1996).

[59] Pickel, *supra* note 56, at 299-311.

[60] Chemay, *supra* note 20, at 726-27 (*citing* Penrod, Loftus & Winkler, *supra* note 42, at 129-30); *see also* sources cited *supra* at notes 20 & 30-34.

for Bigfoot or the Loch Ness Monster, what we expect to see clearly influences what we think we have seen.[61] Unfortunately, stereotypes affect expectations in terms of who looks like a criminal.[62] For example,

> in one experiment a "semi-dramatic" photograph was shown to a wide variety of subjects, including whites and blacks of varying backgrounds. The photograph showed several people sitting in a subway car, with a black man standing and conversing with a white man, who was also standing, but holding a razor. Over half of the subjects reported that the black man had been holding the razor, and several described the black man as "brandishing it wildly." Effectively, expectations and stereotypes cause people to see and remember what they want or expect to see or to remember. This phenomenon should be of concern to the criminal justice system as "[t]here is evidence that some people may in fact incorporate their stereotype of 'criminal' in their identification of suspects. . . ."[63]

5. AGE AND GENDER AS WITNESS FACTORS

[24] Age is an important factor affecting witnesses' memories. Children usually fail to retain as many details as adults, but the percentage of "correct" information that children are able to recall is proportionally similar to that of adults.[64] In terms of making accurate identifications, pre-schoolers are much less likely than adults to make a correct identification.[65] But once children attain the age of five or six, they do not differ significantly from adults in their ability to make an accurate identification.[66] However, children up to the age of thirteen are more likely

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[61] BARTOL & BARTOL, *supra* note 22, at 227; *see also* sources cited *supra* at notes 20 & 30-34.

[62] Penrod, Loftus & Winkler, *supra* note 42, at 129-30; Michael R. Leippe, *Effects of Integrative Memorial and Cognitive Processes on the Correspondence of Eyewitness Accuracy and Confidence*, 4 LAW & HUM. BEHAV. 261-74 (1980).

[63] Chemay, *supra* note 20, at 727 (*citing* Loftus, *supra* note 26, at 37-39).

[64] Brigham, Wasserman & Meissner, *supra* note 34, at 16; Joanna D. Pozzulo & R.C.L. Lindsay, *Identification Accuracy of Children Versus Adults: A Meta-Analysis*, 22 LAW & HUM. BEHAV. 549 (1998).

[65] Pozzulo & Lindsay, *supra* note 64.

[66] *Id.*; Gail S. Goodman & Rebecca S. Reed, *Age Differences in Eyewitness Testimony*, 10 LAW & HUM. BEHAV. 317 (1986).

than adults to correctly reject a target-absent lineup.[67] In contrast, elderly witnesses are much less reliable than younger ones.[68] The elderly frequently believe events they imagined were actually perceived, a mistake known as a *reifying error*.[69] And both children and the elderly are particularly "susceptible to the effects of suggestive questioning or post-event misinformation."[70]

[25] Gender has much less significance on memory accuracy than age. Some studies suggest that women might have slightly higher accuracy rates in facial recognition,[71] and other studies suggest that recall is consistent with gender stereotypes.[72] For example, a woman might pay more attention to clothing, while a man might take notice of the make of a car.[73] These gender differences, however, are generally considered to have little significance on the overall accuracy of eyewitness identifications.[74]

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[67] Pozzulo & Lindsay, *supra* note 64, at 563.

[68] A. Daniel Yarmey, *The Elderly Witness*, *in* PSYCHOLOGICAL ISSUES IN EYEWITNESS IDENTIFICATION, 259 (Siegfried Ludwig Sporer, Roy S. Malpass & Guenter Koehnken, eds., Mahwah, NJ: Lawrence Erlbaum Associates 1996).

[69] Amina Memon, Lorraine Hope, James Bartlett & Ray Bull, *Eyewitness Recognition Errors: The Effects of Mugshot Viewing and Choosing in Young and Old Adults*, 30 MEMORY & COGNITION 1219 (2002); *see also* Amina Memon & Fiona Gabbert, *Improving the Identification Accuracy of Senior Witnesses: Do Prelineup Questions and Sequential Testing Help?*, 88 J. APPLIED PSYCHOL. 341 (2003); Gillian Cohen & Dorothy Faulkner, *The Effects of Aging on Perceived and Generated Memories, in* EVERYDAY COGNITION IN ADULTHOOD AND LATE LIFE 222-43 (Leonard W. Poon, David C. Rubin & Barbara A. Wilson, eds., New York: Cambridge University Press, 1989).

[70] Pozzulo & Lindsay, *supra* note 64, at 16; Goodman & Reed, *supra* note 66.

[71] Torun Lindholm & Sven Ake Christianson, *Gender Effects in Eyewitness Accounts of a Violent Crime*, 4 PSYCHOL., CRIME & LAW 323 (1998).

[72] Douglas J. Herrmann, Mary Crawford & Michelle Holdsworth, *Gender-Linked Differences in Everyday Memory Performance*, 83 BRITISH J. PSYCHOL. 221 (1992).

[73] *See* Elizabeth F. Loftus, Mahzarin R. Banaji, Jonathan W. Schooler & Rachael A. Foster, *Who Remembers What? Gender Differences in Memory*, 26 MICH. Q. REV. 64 (1987).

[74] Vrij, *supra* note 7, at 108.

6. CROSS-OVER FACTORS CONCERNING CHARACTERISTICS OF THE OFFENDER

[26] An eyewitness is much more likely to identify accurately someone of his or her own race than someone of a different race.[75] The same is true, although arguably to a lesser extent, for cross-ethnic identifications.[76] Because of cross-racial bias, people apply more lenient criteria in identifying someone of a different race or ethnicity, while using more stringent requirements for making an identification of someone of the same racial or ethnic group.[77] The result of cross-racial bias is a higher rate of false positive identifications, especially when a Caucasian eyewitness identifies an African-American suspect.[78] A combination of event factors (e.g., duration and conditions of viewing) interact with cross-racial bias to further inhibit the reliability of cross-racial identifications.[79] Courts have begun to take notice of this significant limitation on identification accuracy. The Supreme Court of New Jersey, for example, has mandated that juries be instructed on the risks of inaccuracies in cross-racial identifications when an "identification is a critical issue in the case, and an eyewitness's cross-racial identification is not corroborated by other evidence giving it independent reliability."[80]

[27] Another variable that affects the accuracy of an eyewitnesses' identification of a suspect is the facial distinctiveness of the suspect. Suspects with faces that an eyewitness perceives as either highly attractive or highly unattractive are much more likely to be remembered accurately than faces that lack distinctiveness.[81] A complicating matter, however, is that some characteristics of facial distinctiveness are easily changed. For example, a suspect can

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[75] Heather M. Kleider & Stephen D. Goldinger, *Stereotyping Ricochet: Complex Effects of Racial Distinctiveness on Identification Accuracy*, 25 LAW & HUM. BEHAV. 605 (2001); Alexandra J. Golby, John D.E. Gabrieli, Joan Y. Chiao & Jennifer L. Eberhardt, *Differential Responses in the Fusiform Region to Same-Race and Other-Race Faces,* 4 NATURE-NEUROSCIENCE 845 (2001); Michael R. Leippe, *The Case for Expert Testimony About Eyewitness Memory*, 1 PSYCHOL. PUB. POL'Y. & L. 909, 917 (1995).

[76] Siegfried Ludwig Sporer, *Recognizing Faces of Other Ethnic Groups: an Integration of Theories*, 7 PSYCHOL. PUB. POL'Y & L. 36 (2001).

[77] *See* Kleider & Goldinger, *supra* note 75; Golby et al., *supra* note 75; Leippe, *supra* note 75; Sporer, *supra* note 76.; *see also* James M. Doyle, *Discounting the Error Costs: Cross-Racial False Alarms in the Culture of Contemporary Criminal Justice*, 7 PSYCHOL. PUB. POL'Y & L. 253 (2001).

[78] Doyle, *supra* note 77; *see also* Golby, et al., *supra* note 75.

[79] Otto H. MacLin, M. Kimberly MacLin & Roy S. Malpass, *Race, Arousal, Attention, Exposure and Delay: An Examination of Factors Moderating Face Recognition*, 7 PSYCHOL. PUB. POL'Y & L. 134 (2001).

[80] New Jersey v. Cromedy, 727 A.2d 457, 467 (N.J. 1999).

disguise himself or herself during the perpetration of a crime, or change his/her appearance after it by altering hair style, hair color, the presence or absence of facial hair, the wearing of glasses, and so on.[82] Accordingly, while some distinctive facial features might increase subsequent recognition of a person, to be accurate, the two comparisons must use non-malleable characteristics. That is easier said than done.

D. SYSTEMIC FACTORS IMPACTING PERCEPTION AND MEMORY

[28] In addition to the various witness and situational factors affecting the accuracy of identifications, there are a number of factors within the criminal justice system itself that impact the reliability of eyewitness identifications. *Showups*—the presentation of only *the* suspect to a witness—are highly suggestive and, accordingly, produce high levels of false identifications.[83] Moreover, showups have a biasing effect on any subsequent identification at a lineup or in court.[84] Showups should therefore not be used absent some extenuating circumstance that prevents a photo array or lineup from being used. But even when a photo array or a lineup is conducted, a number of systemic factors can affect the reliability of these processes.

1. LINEUP OR ARRAY FAIRNESS

[29] It should be self-evident that for a lineup or photo array to be fair, the actual suspect should not stand out from the other participants (called "foils") in a lineup or photo array.[85] But constructing a truly fair lineup or photo array can be difficult. While the

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[81] Julie A. Sarno & Thomas R. Alley, *Attractiveness and the Memorability of Faces: Only a Matter of Distinctiveness?*, 110 AM. J. PSYCHOL. 81 (1997); John C. Brigham, *Target Person Distinctiveness and Attractiveness as Moderator Variables in the Confidence-Accuracy Relationship in Eyewitness Identifications*, 11 BASIC & APPLIED SOC. PSYCHOL. 101 (1990); Peter N. Shapiro & Steven D. Penrod, *Meta-Analysis of Facial Identification Studies*, 100 PSYCHOL. BULL. 139, 145 (1986).

[82] Vrij, *supra* note 7, at 109; s*ee also* John W. Shepherd & Hadyn D. Ellis, *Face Recall – Methods and Problems*, *in* PSYCHOLOGICAL ISSUES IN EYEWITNESS IDENTIFICATION 87-115 (Siegfried Ludwig Sporer, Roy S. Malpass, et al., eds. 1996).

[83] Vrij, *supra* note 7, at 115; *see also* A. Daniel Yarmey, *Person Identification in Showups and Lineups*, *in* EYEWITNESS MEMORY: THEORETICAL AND APPLIED PERSPECTIVES 131-54 (Charles P. Thompson & Douglas J. Herrmann eds., Mahwah, NJ: Lawrence Erlbaum 1998).

[84] Bruce W. Behrman & Lance T. Vayder, *The Biasing Influence of a Police Showup: Does the Observation of a Single Suspect Taint Later Identification?*, 79 PERCEPTUAL & MOTOR SKILLS, 1239 (1994).

[85] Gary L. Wells & Eric P. Seelau, *Eyewitness Identification: Psychological Research and Legal Policy on Lineups*, 1 PSYCHOL. PUB. POL'Y & L. 765, 779 (1995).

participants should not be clones of each other, they should generally be of the same race,[86] should be similarly dressed (although preferably not in clothing matching witnesses' descriptions of clothing worn by the culprit),[87] should not be of substantially differing height and weight,[88] and should not have visible distinctive features (e.g., all should have similar or absent facial hair; either all of none should have tattoos, etc.).[89]

[30] The number of foils presented along with the suspect is also important to lineup or photo array fairness. The more people who participate in a lineup, the less likely a suspect will be identified merely by chance. The same is true of photo arrays; the more photographs presented to the witness, the less likely it is the suspect will be identified by chance. Accordingly, most experts recommend that at least six people be in a lineup or photo array.[90] To decrease chance identifications, England routinely uses nine or ten people and Canada uses twelve.[91]

2. ADMINISTRATION OF LINEUPS AND PHOTO ARRAYS

[31] Who administers a lineup or photo array, and how that person does so, both affect the reliability of an identification. First, the procedure should be double-blind. That is, neither the witness nor the person administering the lineup or photo array should know who the suspect

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[86] *Id.*; *see also* Donald P. Judges, *Two Cheers for the Department of Justice's Eyewitness Evidence: A Guide for Law Enforcement*, 53 ARK. L. REV. 231, 254 (2000).

[87] A. Daniel Yarmey, Meagan J. Yarmey & A. Linda Yarmey, *Accuracy of Eyewitness Identifications in Showups and Lineups*, 20 LAW & HUM. BEHAV. 459 (1996).

[88] Wells & Seelau, *supra* note 85, at 779; Judges, *supra* note 86, at 254.

[89] *See* Wells & Seelau, *supra* note 85; Judges, *supra* note 86; Yarmey et al., *supra* note 87.

[90] Gary L. Wells, Mark Small, Steven D. Penrod, Roy S. Malpass, Solomon M. Fulero & C.A.E. Brimacombe, *Eyewitness Identification Procedures: Recommendations for Lineups and Photospreads*, 22 LAW & HUM. BEHAV. 603, 633 (1998); Avaraham M. Levi, *Are Defendants Guilty If They Were Chosen in a Lineup?*, 22 LAW & HUM. BEHAV. 389 (1998); Garl L. Wells, Eric P. Seelau, Sheila M. Rydell & C.A. Elizabeth Luus, *Recommendations for Properly Conducted Lineup Identification Task*, *in* ADULT EYEWITNESS TESTIMONY: CURRENT TRENDS AND DEVELOPMENTS 229 (DAVID FRANK ROSS, J. DON READ, MICHAEL P. TOGLIA eds., 1994) ("A lineup should contain at least five appropriate distractors for every one suspect.").

[91] Avraham M. Levi & R.C.L. Lindsay, *Lineup and Photo Spread Procedures: Issues Concerning Policy Recommendations*, 7 PSYCHOL. PUB. POL'Y & L. 776, 787 (2001).

is and who the foils are.[92] That procedure greatly reduces, if not eliminates, suggestive questioning by the administrator and other possibilities of the administrator unduly influencing the witness, either consciously or unconsciously.[93]

[32] Second, eyewitnesses should be explicitly informed that the suspect may not be in the lineup or array. This should reduce the pressure on the witness to make an identification, thereby decreasing the risk that the witness will make a questionable identification by selecting "the person who best resembles the culprit relative to the others in the lineup" or array.[94]

[33] A third issue with lineup or photo array administration concerns the presentation of the participants. Historically, all of the participants in a photo array or lineup were presented to the witness at the same time—a practice that continues to this day. But research has demonstrated that sequential viewing of photographs or lineup participants one after another, rather than simultaneous viewing of all participants, is preferable. As with the previous precaution, this procedure reduces a witness' use of relative decision-making by encouraging a witness to use an absolute threshold.[95] "Critical tests of this hypothesis have consistently shown that a sequential procedure produces fewer false identifications than does a simultaneous procedure with little or no decrease in rates of accurate identification."[96]

[34] Finally, when sequential viewing is used, witnesses should be asked how certain they are of an identification. Obtaining a statement of confidence level before other information can prevent contamination of a witness' judgment, thereby increasing the reliability of an identification.[97] Since confidence level at the time of initial identification is a powerful force in

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[92] Wells & Seelau, *supra* note 85, at 775-78.

[93] *Id.* at 776; *see also* Nancy Mehrkens Steblay, *Social Influence in Eyewitness Recall: a Meta-analytic Review of Lineup Instruction Effects*, 21 LAW & HUM. BEHAV. 283 (1997).

[94] *Id.* at 778-79.

[95] *Id.* at 772; *see also* Levy & Lindsay, *supra* note 91; Steblay, *supra* note 93.

[96] Wells & Seelau, *supra* note 85, at 772 (*citing* Siegfried Ludwig Sporer, *Eyewitness Identification Accuracy, Confidence, and Decision Times in Simultaneous and Sequential Lineups*, 78 J. APPLIED PSYCHOL. 22 (1993); Brian L. Cutler & Steven D. Penrod, *Improving the Reliability of Eyewitness Identification: Lineup Construction and Presentation*, 73 J. APPLIED PSYCHOL. 281 (1988)).

[97] *Id.* at 780-81.

determining both the admissibility of an out-of-court identification [98] and the weight accorded to it by the trier-of-fact,[99] it should be self-evident why an uncontaminated statement of high confidence should be obtained at the time of an initial identification.[100] But the importance of initial confidence goes beyond the obvious in light of a phenomenon called *confidence malleability*. Confidence malleability is "the tendency for an eyewitness to become more or less confident in his or her identification as a function of events that occur after the identification.[101]

3. REFORM OF PROBLEMATIC SYSTEMIC VARIABLES

[35] In light of the empirical research demonstrating systemic problems with eyewitness identification, the American Psychology and Law Society and the U.S. Department of Justice both published guides for reforming the way the criminal justice system approaches eyewitness evidence.[102] In 2001, New Jersey became the first state to require two of the primary safeguards recommended in those reports: blind administration of photo arrays and lineups, and sequential lineups.[103] "The use of blind procedures prevents an investigator from accidentally providing suspect information to a witness, thereby significantly decreasing the likelihood of

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[98] Manson v. Brathwaite, 432 U.S. 98, 114 (1977); Neil v. Biggers, 409 U.S. 188, 199-200 (1972).

[99] Steven M. Smith, R.C.L. Lindsay & Sean Pryke, *Postdictors of Eyewitness Errors: Can False Identifications Be Diagnosed?*, 85 J. APPLIED PSYCHOL. 542 (2000); Michael R. Leippe, Andrew P. Manion & Ann Romanczyk, *Eyewitness Persuasion: How and How Well Do Fact Finders Judge the Accuracy of Adults' and Children's Memory Reports?*, 63 J. PERSONALITY & SOC. PSYCHOL. 181 (1992); Michael R. Leippe, Andrew P. Manion & Ann Romanczyk, *Eyewitness Memory for a Touching Experience: Accuracy Differences Between Child and Adult Witnesses*, 76 J. APPLIED PSYCHOL. 367 (1991); Gary L. Wells & Michael R. Leippe, *How Do Triers of Fact Infer the Accuracy of Eyewitness Identifications? Using Memory for Peripheral Detail Can Be Misleading*, 66 J. APPLIED PSYCHOL. 682 (1981).

[100] *See, e.g.,* Allwood, et al., *supra* note 33; Nathan Weber & Neil Brewer, *Positive Versus Negative Face Recognition Decisions: Confidence, Accuracy, and Response Latency*, 20 APPLIED COGNITIVE PSYCHOL. 17 (2006).

[101] *See, e.g.,* Allwood, et al., *supra* note 33; Nathan Weber & Neil Brewer, *Positive Versus Negative Face Recognition Decisions: Confidence, Accuracy, and Response Latency*, 20 APPLIED COGNITIVE PSYCHOL. 17 (2006).

[102] Gary L. Wells et al., *supra* note 90, at 603; U.S. Dep't of Justice, Eyewitness Evidence: A Guide for Law Enforcement (Oct. 1999), *available at* http://www.ncjrs.org/pdffiles1/nij/178240.pdf (last visited May 30, 2006).

[103] Winn S. Collins, *Safeguards for Eyewitness Identification*, 77-MAR. WIS. LAW. 8, 11 (2004) (*citing* Letter from John J. Farmer Jr., New Jersey Attorney General, to County Prosecutors et al. 1-2 (Apr. 18, 2001), *available at* http://www.state.nj.us/lps/dcj/agguide/photoid.pdf (last visited May 31, 2006).

misidentification based upon memory contamination."[104] The confidence of identification procedures is likewise increased by sequentially showing an eyewitness a single photo or person at a time, helping to reduce the chance of an eyewitness making a relative judgment between the choices presented, "thereby encouraging the use of the absolute judgment process."[105]

[36] Following New Jersey's lead, several other states began to examine how identification procedures can be conducted to minimize many of the systemic variables that negatively affect memory. For example, North Carolina implemented blind administration and sequential lineup procedures in 2003.[106] Also in 2003, the Illinois state legislature enacted a law requiring that all lineups be "'photographed or otherwise recorded,' and such photographs must be given to defense during discovery, along with all photographs of suspects shown to the eyewitness during the photo spread."[107] Additionally, eyewitnesses participating in lineups must sign a consent form which informs them that "the suspect might not be in the lineup; the eyewitness is not obligated to make an identification; and the eyewitness 'should not assume that the person administering the lineup or photo spread knows which person is the suspect in the case.'"[108] Massachusetts is considering not only sequential administration of photos or people in lineups and blind administration procedures, but is also studying other safeguards such as "electronic recording of statements made by suspects whenever possible and practical; [and] providing an attorney for every suspect who participates in a live lineup."[109]

[37] While reform of eyewitness identification procedures can have a very positive effect on minimizing misidentification of a suspect due to systemic variables, these policy enhancements have no effect on any of the non-systemic estimator variables described earlier.

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[104] *Id.* at 11 (*citing* Wells et al., *supra* note 90, at 627).

[105] *Id.* at 11 (*citing* U.S. Dep't of Justice, Eyewitness Evidence: A Trainer's Manual for Law Enforcement 38 (Sept. 2003), *available at* http://www.ncjrs.org/nij/eyewitness/188678.pdf (last visited May 31, 2006).

[106] Collins, *supra* note 103, at 49 (*citing* Letter from I. Beverly Lake Jr., Chief Justice, Supreme Court of North Carolina, to Scott Perry et al., Director, Criminal Justice Training & Standards, North Carolina Department of Justice (Oct. 9, 2003)).

[107] Scott Ehlers, *Eyewitness Identification: State Law Reform*, 29 CHAMPION 34 (Apr. 2005) (*citing* 725 ILL. COMP. STAT. 5/107A-5(a)).

[108] *Id.* (*citing* 725 ILL. COMP. STAT. 5/107A-5(b)).

[109] National District Attorneys Association, *Task Force Recommendations on Eyewitness Identification*, 39 PROSECUTOR 16 (Apr. 2005).

Since the many estimator variables described above have a strong effect on memory acquisition, encoding, and retention, there remains a need for jurors to understand the complex ways in which these factors can influence eyewitness identifications.

E. SUMMARY

[38] Bio-psycho-social factors affecting perception and memory are not within the common knowledge of the average juror. Expert testimony regarding these factors would therefore "assist the trier of fact to understand" the unreliable nature of eyewitness identifications, and, therefore, such expert testimony should be admissible under Federal Rule of Evidence 702 and state evidence codes.[110] Not only would that expert testimony be proper under Rule 702, but it would also be "extremely helpful in combating the false image of accuracy that confident witnesses often possess."[111] "Expert testimony has been proven to improve juror knowledge, sensitize jurors to witnessing and identification factors, and desensitize them toward witness confidence."[112] Yet, as will be demonstrated in the next section, some courts do not recognize the value of the testimony.[113]

III. CONFLICTING RULINGS ON THE ADMISSIBILITY OF EXPERT TESTIMONY ON EYEWITNESS EVIDENCE

[39] Courts have inconsistently admitted expert testimony on the reliability of eyewitness identifications. The overwhelming majority of courts have excluded such expert testimony.[114] The reason most frequently cited by courts for excluding expert testimony is that expert testimony regarding the accuracy of identifications usurps the role of the jury as the sole judge of the credibility of witnesses.[115] Other reasons given for refusing to allow such expert

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[110] FED. R. Evid. 702; *see also* Bert Black, *Evolving Legal Standards for the Admissibility of Scientific Evidence*, 239 SCI. 1508, 1512 n.1 (1988).

[111] Brooke Whisonant Patterson, *The "Tyranny of the Eyewitness,"* 28 LAW & PSYCHOL. REV. 195, 202 (2004) (*citing* Leippe, *supra* note 75, at 909-10 (advocating eyewitness expert testimony to inform jurors about psychological processes and the variable affecting the accuracy of eyewitness testimony)).

[112] *Id.* at 202, n.77 (citing Penrod & Cutler, *supra* note 101, at 841).

[113] For an excellent roadmap designed to guide attorneys in raising issues regarding perception and memory, see Lisa Steele, *Trying Identification Cases: an Outline for Raising Eyewitness ID Issues*, 28 CHAMPION 8 (Nov. 2004).

[114] *See generally* Paul C. Giannelli & Edward J. Imwinkelried, Scientific Evidence § 9.2(C), at 434-39 (3d ed. 1999); David L. Faigman et al., Science in the Law: Social Behavioral Science Issues § 8-1.1, at 370 n.3 (2002).

testimony include: that the testimony would not assist the trier of fact,[116] that the testimony would be misleading to the jury,[117] and that cross-examination of the eyewitness in conjunction with jury instructions would address the substance of the proffered testimony.[118] But these conclusions are belied by the empirical data.[119] For example, in *United States v. Smith*,[120] the defendant was convicted of stealing guns from a gun shop. Several lay witnesses testified they saw the defendant running out of the store with the guns. At trial, the defendant proffered expert testimony regarding eyewitness reliability. The expert would have explained the "circumstances that give rise to inaccurate memories," [121] as well as the phenomenon of an eyewitness' false confidence in the identification of a suspect. The appellate court concluded that the district court had properly excluded the proffered expert testimony. The circuit court explained that "in the instant case, the proffered testimony touches 'on areas of common knowledge.' Thus, . . . the testimony would not assist the trier of fact."[122]

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[115] United States v. Lumpkin, 192 F.3d 280, 289 (2d Cir. 1999); United States v. Hall, 165 F.3d 1095, 1107 (7th Cir. 1999) ("the credibility of eyewitness testimony is generally not an appropriate subject matter for expert testimony because it influences a critical function of the jury determining the credibility of witnesses."), *cert. denied*, 527 U.S. 1029 (1999).

[116] United States v. Hall, 165 F.3d 1095, 1102 (7th Cir. 1999); United States v. Smith, 156 F.3d 1046 (10th Cir. 1998); United States v. Walton, 1997 WL 525179 (9th Cir. 1997); United States v. Smith, 122 F.3d 1355, 1358 (11th Cir. 1997); United States v. Kime, 99 F.3d 870, 884 (8th Cir. 1996); United States v. Brien, 59 F.3d 274, 277 (1st Cir. 1995); United States v. Rincon, 28 F.3d 921, 925 (9th Cir. 1994).

[117] United States v. Walton, 1997 WL 525179 (9th Cir. 1997); Smith, 122 F.3d at 1358; Kime, 99 F.3d at 884 (8th Cir. 1996); United States v. Brien, 59 F.3d 274, 277 (1st Cir. 1995); Rincon, 28 F.3d at 925; United States v. Burrous, 934 F. Supp. 525, 528 (E.D.N.Y. 1996) .

[118] United States v. Crotteau, 218 F.3d 826, 832 (7th Cir. 2000).

[119] Mark S. Brodin, *Behavioral Science Evidence in the Age of* Daubert*: Reflections of a Skeptic*, 73 U. CIN. L. REV. 867, 890-91 (2005); *see also* Newsome v. McCabe, 319 F.3d 301 (7th Cir. 2003); Crotteau, 218 F.3d at 832; United States v. Walton, 1997 WL 525179 (9th Cir. 1997); *compare Smith*, 122 F.3d 1355 *with Rincon*, 28 F.3d at 925.

[120] 156 F.3d 1046 (10th Cir. 1998).

[121] *Id.* at 1052.

[122] *Id.* at 1053; *see also* McMullen v. Florida, 714 So. 2d 368, 372 (Fla. 1998) (quoting Johnson v. Florida, 438 So. 2d 774, 777 (Fla. 1983) ("a jury is fully capable of assessing a witness' ability to perceive and remember, given the assistance of cross-examination and cautionary instructions, without the aid of expert testimony.").

[40] Courts' refusal to admit expert testimony on the unreliability of eyewitness testimony is ironic, because it is "the form of social science evidence which is most solidly based in 'hard' empirical science.[123]

> Expert testimony concerning the limitations and weaknesses of eyewitness identification is firmly rooted in experimental foundation, derived from decades of psychological research on human perception and memory as well as an impressive peer review literature. Like [battered women's syndrome or rape trauma syndrome] evidence, this testimony purports to educate the fact-finder about reasons a witness at trial should be believed or disbelieved. The expert is prepared to testify about the factors that adversely affect accuracy (for example, stress, "weapon focus," and confusion of post-event information) and to contradict assumptions likely to be shared by jurors, such as the equation of the witness's level of certainty with the accuracy of the identification.[124]

[41] Some judges have demonstrated an understanding of the psychological research on unreliability of eyewitness identifications and the associated false confidence that eyewitnesses can have in mistaken identifications.[125] Recognizing that these phenomena are not within the common knowledge of jurors, some courts permit experts to address these issues at trial.[126] The following excerpt from *United States v. Hines*[127] illustrates one judge's understanding of the purpose of expert testimony in eyewitness identification cases:

> While jurors may well be confident that they can draw the appropriate inferences about eyewitness identification directly from their life experiences, their

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[123] Brodin, *supra* note 118, at 889; *see also* Saul M. Kassin, V. Anne Tubb, Harmon M. Hosch & Amina Memon, *On the "General Acceptance" of Eyewitness Testimony Research*: *A New Survey of the Experts*, 56 AM. PSYCHOLOGIST 405 (2001).

[124] Brodin, *supra* note 118, at 890.

[125] Brian L. Cutler, Steven D. Penrod & T.E. Stuve, *Juror Decision Making in Eyewitness Identification Cases*, 12 LAW & HUM. BEHAV. 41 (1988) (concluding that laypersons do not know about or understand the factors influencing perception and memory outlined in Section II of this Article).

[126] Newsome, 319 F.3d at 305-07; United States v. Smithers, 212 F.3d 306, 316 (6th Cir. 2000) ("Today, there is no question that many aspects of perception and memory are not within the common experience of most jurors, and in fact, many factors that affect memory are counter-intuitive."); United States v. Hines, 55 F. Supp. 2d 62 (D. Mass. 1999); United States v. Norwood, 939 F. Supp. 1132 (D.N.J. 1996).

[127] 55 F. Supp. 2d 62 (D. Mass. 1999).

> confidence may be misplaced, especially where cross-racial identification is concerned. . . . Nor do I agree that this testimony somehow usurps the function of the jury. The function of the expert here is not to say to the jury – "you should believe or not believe the eyewitness." All that the expert does is provide the jury with more information with which the jury can then make a more informed decision.[128]

IV. CONCLUSION

[42] In a 2003 article entitled, *The Impact of* Daubert *on the Admissibility of Behavioral Science Testimony*,[129] my co-authors and I conducted a comprehensive, empirical analysis of the ways judges scrutinized the admissibility of behavioral science expert testimony in the post-Daubert/Kumho era.[130] In that study, we concluded:

> Courts are split on whether testimony of this subject matter should be permitted under *Daubert*. Some courts admit such testimony, finding it would help the jury assess a defendant's claim of innocence in spite of a positive eyewitness identification. Other courts excluded such testimony finding it would not assist the jury, but rather would mislead it, or, alternatively, that rigorous cross-examination of an eyewitness in conjunction with appropriate jury instructions would be sufficient.[131]

Since that study was published, thereby documenting the inconsistencies in judicial application of *Daubert* to behavioral science testimony, a number of articles and annotations have recognized the study's findings regarding judicial application of *Daubert* to behavioral science testimony. Several of these articles are specific to the issue of expert testimony in cases of eyewitness identifications.[132] Other commentators have called for a harmonizing of inconsistent

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[128] *Id.* at 72.

[129] *See* Henry F. Fradella, Adam Fogarty & Lauren O'Neill, *The Impact of* Daubert *on the Admissibility of Behavioral Science Testimony*, 30 PEPP. L. REV. 403 (2003).

[130] *See* Kumho Tire Co. v. Carmichael, 526 U.S. 137 (1999); Daubert v. Merrell-Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993).

[131] Fradella, et al., *supra* note 128, at 442.

[132] **Articles in Journals**: Eric Haas, The Equal Educational Opportunity Act 30 Years Later: Time to Revisit "Appropriate Action" for *Assisting English Language Learners*, 34 J.L. & EDUC. 361, 387 (2005); Dyane L. Noonan, Where Do We Go from Here? A Modern Jurisdictional Analysis of Behavioral Expert Testimony in *Child Sexual*

outcome regarding the admissibility of expert testimony about eyewitness identifications.[133] These authors called for judges to admit such expert testimony, asserting:

> Given that current scientific research suggests that eyewitness testimony is systematically biased or fallible, when eyewitness identification testimony is important to a trial, expert testimony on well-established cognitive science research should be admissible under both Rule 702 and Rule 403. The goals of obtaining truth and justice can be better achieved by having scientific experts assist the jury by putting eyewitness testimony in the appropriate perspective.[134]

The recommendation to routinely admit expert testimony in this sphere should be adopted by the courts nationwide, just as it has been by the Third Circuit.[135] The overwhelming reasons for

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Abuse Prosecutions, 38 SUFFOLK U. L. REV. 493, 510 (2005); Henry F. Fradella, Lauren O'Neill & Adam Fogarty, *The Impact of* Daubert *on Forensic Science*, 31 PEPP. L. REV. 323, 361 (2004); Gilbert Geis, *Pathological Gambling and Insanity, Diminished Capacity, Dischargeability, and Downward Sentencing Departures*, 8 GAMING L. REV. 347 (2004); William T. Bielby, Can I Get a Witness? Challenges of Using Expert Testimony on Cognitive Bias in Employment Discrimination Litigation, 7 EMP. RTS. & EMP. POL'Y J. 377, 400 (2003).

Articles in Treatises: Margaret A. Berger, The Supreme Court's Trilogy on the Admissibility of Expert Testimony, in ANNOTATED REFERENCE MANUAL ON SCIENTIFIC EVIDENCE § 9, 9 (Michael Saks et al. eds. 2005).

Treatises: *Expert Scientific Evidence, Federal Rule* in 2 WITKIN CAL. EVID. 4th Demon. § 47 (2005 Supp.)*; Scientific Evidence, Non-Scientific Experts, and Reliability*, *in* 29 CHARLES A. WRIGHT & VICTOR J. GOLD, FEDERAL PRAC. & PROC. § 6266 (2004 Supp.); *Defective Product Design--Role of Human Factors, in* 18 AM. JUR. PROOF OF FACTS 2d 117 (2005); *Insanity Defense, in* 41 Am. Jur. Trials: *Selecting and Preparing Expert Witnesses, in* 2 AM. JUR. TRIALS 585 (2006); *Representing the Mentally Disabled Criminal Defendant, in* 27 AM. JUR. TRIALS 1 (2006); *Using the Human Factors Expert In Civil Litigation, in* 40 AM. JUR. TRIALS 629 (2006); *The Daubert Challenge To the Admissibility of Scientific Evidence, in* 60 AM. JUR. TRIALS 1 (2006)*; Expert Witnesses--Defense Perspective, in* 82 AM. JUR. TRIALS 97 (2006).

[133] E.g., Edward Stein, *The Admissibility of Expert Testimony about Cognitive Science Research on Eyewitness Identification*, 2 LAW, PROBABILITY & RISK 295 (2003); Scott Woller, *Rethinking the Role of Expert Testimony Regarding the Reliability of Eyewitness Identifications in New York*, 48 N.Y.L. SCH. L. REV. 323, 352 (2003/2004).

[134] Stein, *supra* note 132, at 303; *see also* Woller, *supra* note 132, at 352; *cf.* Barry C. Scheck, *Mistaken Eyewitness Identification: Three Roads to Reform*, 28 CHAMPION 4 (Dec. 2004); Steele, *supra* note 113; Patterson, *supra* note 111.

[135] *See* United States v. Mathis, 264 F.3d 321, 340 (3d Cir. 2000) ("experts who apply reliable scientific expertise to juridically pertinent aspects of the human mind and body should generally, absent explicable reasons to the contrary, be welcomed by federal courts"); United States v. Stevens, 935 F.2d 1380 (3d Cir. 1991); United States v. Downing, 753 F.2d 1224 (3d Cir. 1985).

doing so are discussed above. The scientific research on memory, generally, and eyewitness identification in particular "are quite counterintuitive and hardly commonsensical."[136] But there are other reasons as well.

[43] Generalized testimony about problems with perception and memory helps juries to evaluate eyewitness testimony without the undue prejudice that could occur if specific witness vouching were to occur. Yet, the general nature of scientific research presented in Section II is often cited as a reason to exclude the expert testimony. It is undoubtedly true that such testimony is often highly generalized and, therefore, may or may not be applicable to any given case. "Boston lawyer James Doyle stated this more succinctly than I when he said that eyewitness experts can tell you what happens thirty percent of the time, but cannot tell you whether this particular eyewitness is one of the 30 or one of the 70."[137] But this criticism misses the mark because empirical research has demonstrated that jurors are not even aware of many of the shortcomings of eyewitnesses, even in Doyle's hypothetical 30 percent. The results of cognitive science research are not too general, but rather are appropriately general for the purpose of assisting jurors to take a realistic view of eyewitness testimony."[138]

[44] Another reason for admitting expert testimony is the inadequacy of jury instructions in educating juries on the factors relevant to perception and memory. Jury instructions do not explain the complexities about perception and memory in a way a properly qualified person can. Expert testimony about the cognitive biases and errors can do that far better than "being told the results of scientific research in a conclusory manner by a judge"—especially since jury instructions are given far too late in a trial to help jurors evaluate relevant eyewitness testimony with information beyond their common knowledge.[139]

[45] Finally, it should be recognized that expert testimony on the unreliability of certain eyewitness identifications adds to the length and expense of trial. However, a defendant's right to a fair trial should trump those concerns, as no conviction should be based upon common misconceptions regarding the alleged reliability of what someone saw with their own eyes. Taking the time to educate a jury on the biases and errors involved in eyewitness identification is

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[136] Stein, *supra* note 132, at 300.

[137] Gary L. Wells, *Eyewitness Identification Evidence: Science and Reform*, 29 CHAMPION 12 (Apr. 2005).

[138] Stein, *supra* note 132, at 300; *see also, e.g.*, David Faigman, et al., *The Legal Relevance of Research on Eyewitness Identifications*, *in* SCIENCE IN THE LAW: SOCIAL AND BEHAVIORAL SCIENCE ISSUES 369, 378-79 (2000).

[139] Stein, *supra* note 132, at 302 (*citing* CUTLER & PENROD, *supra* note 40, at 264 (1995) ("judges' instructions do not serve as an effective safeguard against mistaken identifications and convictions")).

worth the time, especially since expert testimony about eyewitness identification improves juror functioning.[140]

[46] For all of the above reasons, it is time for judges to act uniformly in admitting opinion testimony from qualified experts regarding the many pitfalls of eyewitness identifications.

[140] *Id.* at 302 n.45 (*citing* CUTLER & PENROD, *supra* note 40, at 268 ("There are now sound reasons to believe that jurors not only need [expert] testimony [on eyewitness identification] but [that they] also benefit from it"); Loftus & Doyle, *supra* note 41, at 296 ("while expert testimony is no panacea, it does enhance the quality of jury deliberations").