



Juror decision making: Does expert testimony produce improved accuracy when an eyewitness is confident?

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Juror decision making: Does expert testimony produce improved accuracy when an eyewitness is confident?

Hailey Noelle Jensen

A Thesis in the Field of Psychology
for the Degree of Master of Liberal Arts in Extension Studies

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Abstract

This study was an experiment comparing participant responses to a mock trial script including confident eyewitness testimony (that was either supported or contradicted by the mock trial evidence presented in the script) with, and without, expert testimony on the accuracy of eyewitness reports and memory errors. The researcher hypothesized that mock jurors exposed to expert testimony on the limitations of eyewitness accounts would be less likely to convict when faced with an eyewitness statement that was inconsistent with the presented trial facts. 156 participants recruited from Amazon Mechanical Turk were included in the final analyses. While the evidence did not support the eyewitness testimony, there was a significant difference ($p < .10$) between the groups, ($\chi^2 [1, N = 83] = 3.44, p = 0.063$, Cramer's $V = .20$) with those exposed to the expert testimony choosing to convict at a rate 20% higher than those not exposed to the expert. Not only did the jurors exposed to expert witness testimony and trial facts inconsistent with eyewitness testimony not convict less than their counterparts, but the jurors in this designated group also convicted at a higher percentage than all of the other groups. There is a gap in our field when it comes to educating our jurors about eyewitness errors. Researchers have to find a way to close the gap between academia and jurors in order to help those at the mercy of the law.

Dedication

I dedicate this thesis to the following: To my Nan, who allowed me to dream big. To my mom, who helped me operationalize those dreams. To my Aunt Cheryl, who supported those dreams in more ways than one. To Chelsea and Breanna, who have always been amazing cheerleaders. To Cecilia, who is the best friend I could ever ask for. Each of you are fierce warriors who prove that being a woman is synonymous with being powerful. I love you to the ends of the earth and beyond. Thank you for being the most incredible girl gang on the face of the planet.

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Chapter I

Introduction

Every day, innocent individuals sit in prison, hoping to be exonerated. For some, time away from their families or jobs or even their reputations are at stake. For others, their lives hang in the balance on Death Row. Of the 375 wrongful convictions in the United States that have been overturned by DNA evidence, approximately 70% were convicted with false eyewitness identifications (Innocence Project, 2021). That equates to over 250 wrongful convictions in which innocent people were taken from their homes and put in jail at least partly based on the false, albeit potentially well-intentioned, word of an eyewitness.

When rendering a verdict, jurors must determine the credibility of a witness. However, when jurors are uninformed about the factors that affect eyewitness identification accuracy, it affects trial outcomes, and people. This raises the question: if jurors knew better, would they do better? Specifically, does expert testimony produce improved accuracy in juror decision making?

With the current research, a mock trial will be employed to determine the effects of an expert testimony disclaimer on jurors' abilities to look at all the evidence as opposed to the eyewitness testimony alone. The first independent variable is the testimony by an expert. The second independent variable is the trial evidence given to the jury—evidence that supports or contradicts the eyewitness testimony. The constant variable will be the eyewitness' full confidence in their assertion that the defendant is their assailant. The dependent variable will be the jurors' decision to convict or acquit the

defendant. A post-trial survey will be given to determine the effects that the eyewitnesses and expert testimonies had on juror decisions.

It is hypothesized that the conditions in which an expert can outline the errors that occur in eyewitness testimonies will be the conditions where jurors come to a decision based on the evidence as a whole. It is the researcher's hope that this information will ultimately add to a growing body of literature that will better inform our criminal justice system and its proceedings, leading to fewer innocent people being convicted of crimes that did not commit and reducing the number of wrongful convictions by jurors in cases where eyewitness testimonies are utilized.

Definition of Terms

Acquittal: the judgement that an individual is not guilty of a crime with which they were charged

Conviction: the formal declaration that an individual is guilty of a specific crime

Eyewitness: someone who was a witness to a particular crime (can be the target of the crime or a bystander)

Critical Race Effect (CRE): the tendency to have more accurate recognition for same-race than cross-race faces (Young et al., 2012, p 117))

Eyewitness testimony: the testimony of an eyewitness given at trial

Expert Testimony: the trial testimony of an expert in a given field that is used to inform the jurors of scientific evidence relevant to the case

Fallibility: the tendency to make a mistake or be wrong

Perceptual Expertise Theory of the CRE: humans are face processing experts; however, this does not generalize equally to all faces. Racial segregation, formal

or informal, results in perceivers developing greater expertise processing and distinguishing between faces of their own race relative to those of other races, leading to superior recognition of same-race compared to cross-race faces (Young et al., p 117)

Social Cognitive Model of the CRE: the tendency to process outgroup targets in a categorical manner while instead individuating ingroup members (Young et al., 2012, p 117)

Background of the Problem

Eyewitnesses may be well meaning; however, their accuracy is limited. When unaware of the mistakes that eyewitnesses can make, the jury can then make their own mistakes by improperly evaluating evidence and subsequently convicting those who are innocent.

In *State v. Cotton* (1987), Ronald Cotton, an African American man, was convicted of first-degree rape and first-degree burglary. The eyewitness, and victim of the rape, was Jennifer Thompson, a Caucasian woman. Thompson's testimony was that she was certain Ronald Cotton was the man who had attacked her. Cotton was sentenced to life in prison plus 54 years. DNA evidence proved him innocent 11 years later. The Cotton trials exemplify how juries often fail to understand that eyewitnesses can, and do, make mistakes (Albright, 2017).

Reasons Eyewitnesses Make Memory Errors

While eyewitnesses may be confident in their ability to recall a crime, research on human memory shows that high levels of stress negatively impact eyewitness memory (Deffenbacher, et al., 2004).

Stress. In Deffenbacher and colleagues' meta-analytic review of high stress on eyewitness memory, the researchers conducted 27 independent tests, consisting of 1,727 participants, on the effects of heightened stress on eyewitness identification for a perpetrator or target person. Furthermore, researchers conducted 36 tests, consisting of 1,946 participants, which investigated eyewitness recall of details that were associated with the crime. Appropriate studies were found using online databases such as PsycINFO, educational resources information center (ERIC), Medline, etc. Each of the studies had to have been published in order to align with the preferences of the legal standards for preferred scientific testimony established by the Supreme Court in *Daubert v. Merrell Dow Pharmaceuticals* (1993). Additionally, studies had to include a statistical test of the effect of heightened stress on eyewitness memory accuracy, with stress or anxiety being manipulated directly, and manipulation checks in order to show that the manipulation of stress or anxiety had been successful. The researchers found that not only does stress negatively impact accuracy of eyewitness identifications, but the negative impacts of stress extend to accuracy of crime related details as well (2004).

Within the meta-analysis, Deffenbacher also examined 22 eyewitness identification studies in which stress was manipulated in the context of a staged crime or a stressor by some other means (i.e., threat of injection or mild electric shock). When looking at the accuracy of identifications among participants, the researchers found that

under conditions of low stress participants were accurate 50% of the time, while in conditions of high stress participants were accurate only 33% of the time (2004).

Confidence. Despite the fallibility of memory, jurors often make decisions as a result of placing disproportionate weight on eyewitness testimony (see Brewer & Burke (2002) below). Psychologists and other behavioral science researchers with specific expertise about how memory works, and how eyewitness accounts may be vulnerable to distortions and other errors, are uniquely qualified to provide expert testimony to help jurors understand the limitations of eyewitness testimony. As important as jurors are in United States court proceedings, it is imperative that they are given at least a basic knowledge about the fallibility of eyewitness testimony.

Studies of how jurors respond to various pieces of evidence presented at a trial show that jurors struggle to distinguish between accurate and inaccurate eyewitness testimonies. Similar to most of us, they typically have a belief that greater confidence implies greater accuracy. For example, in a study by Brewer and Burke (2002), the researchers examined the interaction between testimonial consistency and eyewitness confidence on mock-jurors' verdicts. In this study, testimonial consistency was defined as a witness providing the same response to the defense attorney as they did when responding to the prosecution, while not introducing any novel or contradictory information. Confidence of the eyewitness was manipulated by having the witness introduce doubt through hesitancy and qualifications or certainty through direct responses with no qualifications (i.e., "Yes, I am absolutely positive" versus "Umm...Yes, I guess so"). The researchers found that when an eyewitness was confident, the mock jurors found the defendant guilty around 40% of the time regardless of the eyewitness'

consistency (42% guilty when consistent, 36% guilty when inconsistent). When the researchers looked at the effects of eyewitness testimony consistency, they found that the results were nil when compared to the effects of eyewitness confidence on jury decision making. As such, Brewer and Burke concluded that inconsistencies in eyewitness testimony have a much smaller impact on the jurors if that testimony comes from a confident eyewitness (2002). This is cause for concern as witness confidence is weakly associated with accuracy, while consistency is a powerful predictor of accuracy and seems to make little impact on the jurors (2002; Krug, 2007).

Cross Race Effect. In critical review by Young and colleagues (2012), the Cross-Race Effect (CRE) is broken down by the different models of this phenomenon including, the perceptual expertise and social cognitive accounts of bias. Here, CRE is defined as, “the tendency to have more accurate recognition for same-race than cross-race faces,” (Young et al., 2012, p. 116). In this review, the authors argue that these facial recognition errors made by individuals are leading to wrongful convictions. They go as far as to reference the Innocence Project and the statistic that over one-third of false convictions in the U.S. come from “other-race eyewitness misidentifications,” (2012, p.116). The Cotton case is a prime example of the CRE being at play with the jurors being unaware of its effects or disregarding those effects altogether.

While questioning how this occurs so often, the researchers delve into the perceptual expertise theory of the CRE. Specifically, the *expertise-through-contact* hypothesis which posits disparities of accurate cross-race facial recognition are due to the lack of interaction between interracial individuals, leading to inferior recognition for those in cross-race groups and superior recognition for those in the same-race group.

Another factor that these authors consider is the social cognitive model which asserts that in-group and out-group membership (or same-race and cross-race) lead individuals to categorically think about out-group characteristics. This categorical thinking inhibits the individualized nature of facial recognition and, therefore, has an impact on memory and related processes.

This idea of categorical thinking inhibiting accurate facial recognition closely aligns with Albright's assertion that in order to correctly identify anything you have seen (whether it be a person or an object), one must first see it correctly (2017). Blending these two ideas together, the CRE makes it difficult for individuals to even "see" the person they are looking at due to uncertainty and bias. Vision is susceptible to "noise"; that is, any distraction in the perceptual field. These distractions can look like glares, shadows, loud sounds, refractive errors, and so on. In the case of Jennifer Thompson, this includes the absence of light in her attempt to remember her assailant's features. With all of these components added to the sheer magnitude of stimuli in any given scene one comes across, it becomes difficult for the human brain to take all in and make sense of all of the information available. This creates uncertainty, which leads to our unconscious "patching" of the gaps through bias. Our biases are based on prior experiences and, therefore, allow observers to make, "context-dependent inferences about the environmental cause of visual stimulation," (Albright, 2017, p. 7760). These inferences are based on what individuals *think* should be there, not based on what they actually saw. Per the *expertise-through-contact* hypothesis of CRE mentioned above, when one must make a determination of what is happening around them, specifically with individuals

they do not typically have contact with (cross-race), the inferences being made based on bias can become muddled.

As illustrated above, facial recognition by an eyewitness is negatively impacted by race, uncertainty, and bias. Additionally, facial recognition is also affected by the malleability of memory. Information is altered and distorted as we take it in, but it can also be altered and distorted as we retrieve it. Memories:

are not passive, static processes that record, retain, and divulge their contents in an informational vacuum, unaffected by outside influences. The contents cannot be treated as a veridical permanent record, like photographs stored in a safe. On the contrary, the fidelity of our memories may be compromised by many factors at all stages of processing, from encoding through storage, to the final stages of retrieval. (2017, p. 7760)

With a specific memory that has been compromised at every stage of processing, through CRE, bias, uncertainty, and malleability, the testimony of a Jennifer Thompson was working against many scientific odds to be wholly accurate. Thompson would need to beat every single statistic (and there are a remarkable number of them), in order for her memories to be a true depiction, from start to finish, of the criminal occurrences in question, especially given the lack of lighting during her assault.

The foundation for Thompson's eyewitness testimony was precarious at best. While eyewitness testimonies are always going to be important to connect the general dots, they are not accurate enough to be fully relied upon in the court system. This is why the defense needs to be able to educate the jurors on the fallibility of eyewitness testimony in order for them to be able to make their best, most informed decisions. This should be done with an expert witness on the stand, as will be described later in this paper.

Juror Misconceptions of Eyewitness Testimony

Because people make mistakes, including those who are eyewitnesses in criminal cases in which a life is potentially on the line, jurors should be aware of the limitations of eyewitness testimony. It is assumed that judges' instructions to the jury ameliorate this issue by outlining those limitations, however, Magnussen and colleagues (2010) found that jurors and most legal professionals' knowledge of eyewitness testimony is similar to the general public. For their study, the researchers surveyed judges, former jurors, and the general public in Norway about their knowledge and beliefs about eyewitness testimony. They used three samples, totaling to 1,325 participants, to test the knowledge of eyewitness topics and statements; for example, participants were asked to respond either true or false to statements such as, "At trial, an eyewitness's confidence is a good predictor of his or her accuracy in identifying the defendant as the perpetrator of the crime". Responses were compared to Kassin and colleagues' 2001 survey of eyewitness experts, which was used by Magnussen as the gold standard of current scientific knowledge. On 16 survey items, the judges showed 65% accuracy while the jurors had 57% accuracy. The researchers took seven of those items to the general public. For the seven items, former jurors had 53% accuracy while the general public had 56% accuracy. The results illustrated that judges had a slightly better understanding than jurors and the general public, but that all groups had limited knowledge of the accuracy and the limitations of eyewitness testimony (2010).

Finally, the authors compared their findings to those of surveys in the United States and concluded that there was a similar level of knowledge among law professionals, jurors, and the general public in the two countries. One survey that

Magnussen looked at was Benton and colleagues' 2006 survey in which participants were asked to agree or disagree with 30 statements about eyewitnesses. Participants consisted of 205 individuals, 111 of whom were jurors and 12 were judges. Participants' results were compared to eyewitness experts who completed the same survey. The juror sample answered incorrectly on 87% of the questions, while the judges answered incorrectly on 60% of the questions (2006; 2010).

With jurors being no more knowledgeable or educated on eyewitness memory errors than the general public, individuals can be unfairly convicted by jurors who are unaware of the scientific findings behind eyewitness abilities. In the American legal system, it is a defense attorney's job to make sure their client has a fair trial and that means it is important for them to present evidence that allows jurors to make their best, unbiased, and most informed decisions. Providing jurors with factual information on the limitations of eyewitness testimony is part of that evidence.

Expert Testimony

For jurors to properly weigh the evidence, they should be educated on the fallibility of eyewitness testimony. One way for this to take place is through expert testimony. An expert in a specific field (in this case, a forensic psychologist) is brought in to introduce evidence on the validity of material being presented to the court. In a study by Gomes and colleagues (2016), the researchers compared juror decision-making in a mock case in which false confession expert testimony and jury instructions on reasonable doubt (which instructed jurors to remember that a defendant is presumed innocent until proven guilty, and that the burden is on the state to prove guilt beyond a reasonable doubt) were compared to a control group that was not given this information. In this case,

a false confession was the main piece of evidence presented. Mock jury participants voted to convict in both the control and the judge's instruction groups but acquitted the defendant in the expert testimony group.

While this case was based on a false confession, it may be generalizable to eyewitness mistakes as well. Additional research is needed; however, it is reasonable to expect that there would be similar effects when jurors are given expert testimony on the validity of eyewitness testimony. In their study, Gomes and collaborators found that jury instructions had an insufficient effect on the jurors, illustrating that a real, qualified individual who can convey the science of eyewitness reports may be most helpful to the jurors.

According to Waschenfelder (2021), the authority bias is our natural tendency to attribute greater weight and accuracy to the actions and opinions of an authority figure. For this reason, it is important that an expert witness be well-respected in their field with an impressive pedigree so that their arguments are able to stand up against opposing counsel's questioning.

Conclusion

This study tests the hypothesis that jurors who hear expert testimony explaining the limits of eyewitness accounts will view eyewitness testimony as one of multiple pieces of evidence rather than as the definitive account of a crime. Therefore, it is expected that mock jurors exposed to expert witness testimony on the limitations of

eyewitness accounts will be less likely to convict a hypothetical defendant than those who do not hear the expert.

Chapter II

Method

The study was an experiment comparing participant responses to a mock trial script including eyewitness testimony (that is either supported or contradicted by the mock trial evidence presented in the script) with, and without, expert testimony on the accuracy of eyewitness reports and eyewitness memory errors. For this study, the expert witness came in the form of a TED Talk given by Dr. Thomas Albright, a psychologist, in a presentation titled, “Why Eyewitnesses Fail.” After reading the script and seeing the TED Talk (dependent on group), participants were given a post-trial survey in which they were questioned on facts about the case and asked to render a verdict.

Participants

For this study, 200 volunteer participants were recruited upon the approval from the Harvard Committee on the use of Human Subjects. They were recruited from Amazon Mechanical Turk (MTurk) in exchange for monetary compensation. The participants were ages 18 and up and were limited to those living in the United States to ensure they were familiar with the jury system used in the United States criminal courts. Additionally, participants were required to be native English speakers to make sure they could better understand any English-specific vernacular. These requirements were configured in MTurk during the survey’s construction so that the survey was only displayed to those individuals who met the inclusion criteria.

Participants were not asked for any identifying information such as name, date of birth, or address. Participants were randomly assigned a participant identification number (PIN) which acted as their name until the data was cleaned, at which point the PIN was removed leaving just their responses behind. All responses and files were kept on an encrypted, password protected server to ensure confidentiality. IP addresses were immediately deleted to further protect participants.

In order to account for those who were not paying close attention to the mock trial script, TED talk, and jury survey, manipulation checks on the facts of the case were written in to the resulting survey. Data for participants who did not answer the manipulation check questions correctly were not considered in the analyses. Those responses that were not considered were indicated as such and thrown out.

There were a total of four groups. The researcher planned for each group to have 50 mock jury members who had been randomly selected through the MTurk platform, totaling 200 individuals. All applicable protocols and policies of Harvard University's Institutional Review Board for the use of human subjects in research was complied with in this thesis research.

Materials

A base script of a mock trial was written by the researcher. That base script was then used to create two unique scripts in which the conditions of each group was met (evidence supporting the eyewitness or not). The evidence for the trial was presented in that two-page general overview script. For the conditions that called for it, the testimony of an expert witness, in the form of Dr. Thomas Albright's TED Talk, was presented before the script was displayed in order to prime the participants on eyewitness mistakes.

Additionally, a jury survey was created by the researcher that asked questions about the trial, including the determination of a verdict. Answer choices for the verdict were limited to “guilty” or “not guilty”. Furthermore, the manipulation checks on facts about the case were added to the survey.

Scripts:

A copy of each script can be found below. Script 1 and 2 were used as they were with Groups 1 and 2. Script 1 and 2 were then duplicated for Groups 3 and 4 and were accompanied by the TED Talk video by Dr. Thomas Albright.

Script 1. Presented evidence supported the eyewitness testimony; the eyewitness identified the defendant.

At 12:30pm on December 12, 2019, roommates and coworkers, Kendra Matthews and Jenny Alexander stop at a gas station to get gas and beverages on their way home from their night shift at a local restaurant. Ms. Matthews and Ms. Alexander are both Caucasian females at age 24. After purchasing their items inside the convenience store, they exit the building and begin to cross the parking lot. A black pickup truck enters the parking lot, coming to a stop in the middle of the road between the females and their vehicle. The window is rolled down, and the driver extends their arm holding out a firearm. The driver shoots once, striking Ms. Matthews in the abdomen. The driver then rolls the window up and exits the parking lot. Ms. Alexander immediately begins holding pressure to Ms. Matthew’s wound while shouting for help. The convenience store clerk, who was inside the entire time, calls the police and emergency services are sent out to their location. When the EMTs arrive, they announce that Ms. Matthews is dead on arrival (DOA).

Ms. Alexander is questioned by the police at the scene and again at the police station. The police are able to check video footage at the gas station and confirm that the above sequence of events did indeed happen as described. The footage, however, is too grainy to get any additional information about the vehicle or the driver. The only eyewitness to the murder is Ms. Alexander. Ms. Alexander says she saw a Hispanic male who looked to be in his twenties. She told police that he had dark hair and dark eyes.

Based on Ms. Alexander's description, the police put together four "six-pack" photo lineups. A "six-pack" is procedure in which an array of six photographs, including a photo of the person suspected as the perpetrator of the offense, are displayed to an eyewitness for the purpose of determining whether the eyewitness is able to identify the suspect as the perpetrator. After looking at each of the four six-packs without a decision, Ms. Alexander looks at the photos a second time, pointing out the suspect in the third photo array saying, "That's him, I know it!". The suspect identified is Trevor Andrews.

The police are able to find Mr. Andrews and confirm that he drives a black pickup truck that seems to be the same one from the video footage. When looking into Mr. Andrew's alibi, detectives were able to find location data from his phone that put him within a one-mile radius of the gas station at the time of the shooting. In a parking lot two miles from the shooting, a firearm was recovered from a dumpster. The firearm was dusted for fingerprints with one full thumb print left on the weapon. The print was a 99.8% match to Mr. Andrews.

At trial, the prosecution has Ms. Alexander take the stand to testify against Mr. Andrews. When Ms. Alexander is asked to identify the perpetrator, she immediately points to Andrews saying, "He did it. He shot my friend. I will never forget his face for

the rest of my life.” When she is cross-examined by the defense, she is asked if she is sure that Mr. Andrews was the culprit, to which she responds, “Yes, I am absolutely positive”.

Script 2. Presented evidence contradicted the eyewitness testimony; the eyewitness identified the defendant:

At 12:30pm on December 12, 2019, roommates and coworkers, Kendra Matthews and Jenny Alexander stop at a gas station to get gas and beverages on their way home from their night shift at a local restaurant. Ms. Matthews and Ms. Alexander are both Caucasian females at age 24. After purchasing their items inside the convenience store, they exit the building and begin to cross the parking lot. A black pickup truck enters the parking lot, coming to a stop in the middle of the road between the females and their vehicle. The window is rolled down, and the driver extends their arm holding out a firearm. The driver shoots once, striking Ms. Matthews in the abdomen. The driver then rolls the window up and exits the parking lot. Ms. Alexander immediately begins holding pressure to Ms. Matthew’s wound while shouting for help. The convenience store clerk, who was inside the entire time, calls the police and emergency services are sent out to their location. When the EMTs arrive, they announce that Ms. Matthews is dead on arrival (DOA).

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The police are able to find Mr. Andrews and confirm that he drives a black SUV which seems to be a different vehicle from the video footage. When looking into Mr. Andrew's alibi, detectives were able to find location data from his phone that put him 10 miles away from the gas station at the time of the shooting. In a parking lot two miles from the shooting, a firearm was recovered from a dumpster. The firearm was dusted for fingerprints with one full thumb print left on the weapon. The print was not a match to Mr. Andrews.

At trial, the prosecution has Ms. Alexander take the stand to testify against Mr. Andrews. When Ms. Alexander is asked to identify the perpetrator, she immediately points to Andrews saying, "He did it. He shot my friend. I will never forget his face for the rest of my life." When she is cross-examined by the defense, she is asked if she is sure that Mr. Andrews was the culprit, to which she responds, "Yes, I am absolutely positive".

Data Collection

The survey was administered by MTurk. The resulting data was collected from MTurk and placed into a password-protected Excel sheet on a password-protected computer. Only this researcher and their advisor had access to the data. The data remained deidentified throughout the study and will be destroyed once when the researcher has been given expressed permission by the University to destroy one year after graduation.

Design

The present study used Chi Square Analysis with two independent variables tested using non-parametric statistics.

Procedure

A Qualtrics survey was created, with the distribution of the script, TED Talk video, and survey taking place on MTurk. As such, the stimuli were presented online via cellphone, laptop, computer, etc. When the study was published to MTurk, it was configured so that it was only available to individuals in the United States to ensure only those who fit the inclusion criteria would have access to the survey.

Participants individually read a two-page general overview script in which an eyewitness stated they are undoubtedly sure that the defendant was their perpetrator. Additionally, the expert testimony of a psychologist on the fallibility of eyewitness testimony, in the form of Dr. Thomas Albright's TED Talk, was added to the conditions that call for it before the script was read. This was done to prime the participants on the fallibility of eyewitness memory. In Qualtrics, four different blocks were created for each

individual condition. The participants reviewed the evidence and independently determined guilt. See a summary of the condition groups below:

Group 1: No expert witness; script presented evidence that supported the eyewitness testimony; the eyewitness identified the defendant.

Group 2: No expert witness; script presented evidence that contradicted the eyewitness testimony; the eyewitness identified the defendant.

Group 3: Expert witness presentation (Dr. Thomas Albright's TED Talk); script presented evidence that supported the eyewitness testimony; the eyewitness identified the defendant.

Group 4: Expert witness presentation (Dr. Thomas Albright's TED Talk); script presented evidence that contradicted the eyewitness testimony; the eyewitness identified the defendant.

Participants were asked to answer questions regarding their assumptions of the case in the survey that followed the script. A manipulation check was added to each set of questions and asked about a key point of the case (the color of the perpetrator's vehicle). For those in the expert testimony conditions, an additional manipulation check was added which asked about a metaphor Albright used to make eyewitness memory errors more tangible. Once the participants completed the survey, they were given the researcher's information and the option to follow up for updates about the study if they were interested. Participants were then compensated through MTurk and thanked for their time.

Analysis Plan

After all of the results had been recorded, they were downloaded to a password protected Excel sheet for data analysis. The design of the study was of a Chi Squared Analysis with two independent variables (whether eyewitness is supported by case evidence, and whether there is a testimony by a psychologist as an expert witness) tested using non-parametric statistics, with eyewitness confidence held at a constant. After reviewing the descriptive statistics, statistical analyses were conducted on the survey results, with these analyses being used to test the study hypotheses.

Chapter III

Results

The final sample in this study consisted of 156 participants. The breakdown of the group numbers before and after the manipulation checks is shown in Table 1. Those who failed to pass the manipulation checks were directed to the end of the survey, and their responses up to that point were thrown out. Consistent with the inclusion criteria, only those who passed the manipulation check(s) for their group were included in the final group numbers and used in the analyses.

With the manipulation checks implemented, an uneven number of groups were created. This can be seen in Table 2. Furthermore, due to the uneven number of groups generated by the Qualtrics random assignment of participants to each group, a preliminary analysis of the verdicts by group was employed to gauge initial trends. As seen in Table 3, Group 4 (Evidence Does Not Support; TED Talk) had the highest percentage of guilty verdicts by participants, with 83% of the group agreeing to convict. Conversely, Group 2 (Evidence Does Not Support; No TED Talk) had the lowest percentage of guilty verdicts handed out at just 63%, with the remaining groups falling in the middle at 78% (Group 1—Evidence Supports; No TED Talk) and 71% (Group 3—Evidence Supports; TED Talk), respectively. Additionally, Table 4 shows the observed and expected frequencies used in the chi-squared analysis for the verdicts given with each of the four groups together.

Table 1. Participants Per Group.

N=156	All Consenting	After Manipulation Check One	After Manipulation Check Two	Final Number of Participants Per Group
Group One (Evidence Supports; No TED Talk)	70	49	-	49
Group Two (Evidence Does Not Support; No TED Talk)	67	54	-	54
Group Three (Evidence Supports; TED Talk)	43	30	24	24
Group Four (Evidence Does Not Support; TED Talk)	53	36	29	29

Note: This table displays the how the final number of participants per group came to be after various manipulation checks in the Qualtrics survey

Table 2. Participant Conditions.

	Expert Witness (TED Talk)	No Expert Witness (No TED Talk)	Total
Evidence Supports Eyewitness	24	49	73
Evidence Does Not Support Eyewitness	29	54	83
Total	53	103	

Note: This table displays the number of participants to experience their respective conditions. The final row and column indicate the total number of participants that were exposed to the indicated stimuli.

Table 3. Verdict by All Group.

	Guilty	Not Guilty	Total
Group One (Evidence Supports; No TED Talk)	38 78%	11 22%	49
Group Two (Evidence Does Not Support; No TED Talk)	34 63%	20 37%	54
Group Three (Evidence Supports; TED Talk)	17 71%	7 29%	24
Group Four (Evidence Does Not Support; TED Talk)	24 83%	5 17%	29
Total	113 72.4%	43 27.6%	156

Note: This table displays what verdict the participants rendered by group. Under each number of participant votes is the percentage of the group that verdict makes up. The final column displays the number of participants per group, which was used to determine the appropriate percentages. The final row displays the total number of participants that rendered the indicated verdict and the corresponding percentage of the group that verdict makes up

Table 4. Observed and Expected Frequencies for All Groups Analyzed Together.

	Guilty	Not Guilty
Group One (Evidence Supports; No TED Talk)	38 (35.5)	11 (13.5)
Group Two (Evidence Does Not Support; No TED Talk)	34 (39.1)	20 (14.9)
Group Three (Evidence Supports; TED Talk)	17 (17.4)	7 (6.6)
Group Four (Evidence Does Not Support; TED Talk)	24 (21)	5 (8)

Note: This table displays what verdict the participants rendered by group. Under each number of participant votes is the expected frequency used to determine the chi-squared value.

The data was then separated by independent variables. Table 5 displays the verdicts by Group 1 and Group 2—the groups that were not exposed to the TED Talk expert testimony. When the evidence supported the eyewitness (Group 1), 78% of participants chose to convict the perpetrator. When the evidence did not support the eyewitness (Group 2), only 63% of participants chose to convict the perpetrator. Table 6 shows the observed and expected frequencies used in the chi-squared analysis for the verdicts given with Groups 1 and 2 together.

Table 7 displays the verdicts by Group 3 and Group 4—the groups that were exposed to the TED Talk expert testimony. When the evidence supported the eyewitness (Group 3), 71% of participants chose to convict the perpetrator. When the evidence did not support the eyewitness (Group 4), 83% of participants chose to convict the perpetrator. Table 8 shows the observed and expected frequencies used in the chi-squared analysis for the verdicts given with Groups 3 and 4 together.

Table 9 displays the verdicts by Group 1 and Group 3—the groups in which the evidence supported the eyewitness statement. When the group was not exposed to the TED Talk (Group 1), 78% of participants chose to convict the perpetrator. When the group was exposed to the TED Talk (Group 3), only 71% of participants chose to convict the perpetrator. Table 10 shows the observed and expected frequencies used in the chi-squared analysis for the verdicts given with Groups 1 and 3 together.

Table 11 displays the verdicts by Group 2 and Group 4—the groups in which the evidence did not support the eyewitness statement. When the group was not exposed to the TED Talk (Group 2), 63% of participants chose to convict the perpetrator. When the group was exposed to the TED Talk (Group 4), 83% of participants chose to convict the perpetrator. Table

12 shows the observed and expected frequencies used in the chi-squared analysis for the verdicts given with Groups 2 and 4 together.

After the critical values were determined, the p-values were calculated along with the effect size using Cramer's V for chi-squared analysis. When the groups were kept together for data analysis, there was no difference between groups ($\chi^2 [3, N = 156] = 4.65, p = 0.199$, Cramer's $V = .10$). When the groups were separated, slightly different results were yielded. For the groups not exposed to the TED Talk (Groups 1 and 2), ($\chi^2 [1, N = 102] = 2.53, p = 0.111$, Cramer's $V = .16$). For the groups exposed to the TED Talk (Groups 3 and 4), ($\chi^2 [1, N = 53] = 1.11, p = 0.292$, Cramer's $V = .14$). When the evidence supported the eyewitness statement (Groups 1 and 3), ($\chi^2 [1, N = 73] = 0.4, p = 0.527$, Cramer's $V = .07$).

Finally, when the evidence did not support the eyewitness testimony, there was a significant difference ($p < .10$) between the groups, ($\chi^2 [1, N = 83] = 3.44, p = 0.063$, Cramer's $V = .20$). Additionally, when looking at the effect size, there was a weak relationship between the evidence not supporting the eyewitness statement and the resulting verdict—though it should be noted that participants were more likely to convict when the evidence did not support the eyewitness statement. Each of the chi-squared values, p-values, and Cramer's V values can be found in Table 13.

Table 4. Observed and Expected Frequencies for All Groups Analyzed Together.

	Guilty	Not Guilty
Group One (Evidence Supports; No TED Talk)	38 (35.5)	11 (13.5)
Group Two (Evidence Does Not Support; No TED Talk)	34 (39.1)	20 (14.9)
Group Three (Evidence Supports; TED Talk)	17 (17.4)	7 (6.6)
Group Four (Evidence Does Not Support; TED Talk)	24 (21)	5 (8)

Note: This table displays what verdict the participants rendered by group. Under each number of participant votes is the expected frequency used to determine the chi-squared value.

Table 5. Verdict by TED Talk Being Absent.

	Guilty	Not Guilty	Total
Group One (Evidence Supports; No TED Talk)	38 78%	11 22%	49
Group Two (Evidence Does Not Support; No TED Talk)	34 63%	20 37%	54
Total	72 70%	31 30%	N = 103

Note: This table displays what verdict the participants rendered by group. This table specifically looks at the groups that were not exposed to the TED Talk. Under each number of participant votes is the percentage of the group that verdict makes up.

Table 6. Observed and Expected Frequencies by TED Talk Being Absent.

	Guilty	Not Guilty
Group One (Evidence Supports; No TED Talk)	38 (34.3)	11 (14.7)
Group Two (Evidence Does Not Support; No TED Talk)	34 (37.7)	20 (16.3)
Resulting Chi-Squared Value		2.53

Note: This table displays what verdict the participants rendered by group. This table specifically looks at the groups that were not exposed to the TED Talk. Under each number of participant votes is the expected frequency used to determine the chi-squared value.

Table 7. Verdict by TED Talk Being Present.

	Guilty	Not Guilty	Total
Group Three (Evidence Supports; TED Talk)	17 71%	7 29%	24
Group Four (Evidence Does Not Support; TED Talk)	24 83%	5 17%	29
Total	41 77%	12 23%	N = 53

Note: This table displays what verdict the participants rendered by group. This table specifically looks at the groups that were exposed to the TED Talk. Under each number of participant votes is the percentage of the group that verdict makes up.

Table 8. Observed and Expected Frequencies by TED Talk being Present.

	Guilty	Not Guilty
Group Three (Evidence Supports; TED Talk)	17 (18.6)	7 (5.4)
Group Four (Evidence Does Not Support; TED Talk)	24 (22.4)	5 (6.6)
Resulting Chi-Squared Value		1.11

Note: This table displays what verdict the participants rendered by group. This table specifically looks at the groups that were exposed to the TED Talk. Under each number of participant votes is the expected frequency used to determine the chi-squared value.

Table 9. Verdict by Evidence Supporting Eyewitness.

	Guilty	Not Guilty	Total
Group One (Evidence Supports; No TED Talk)	38 78%	11 22%	49
Group Three (Evidence Supports; TED Talk)	17 71%	7 29%	24
Total	55 75%	18 25%	N = 73

Note: This table displays what verdict the participants rendered by group. This table specifically looks at the groups in the condition where the evidence supported the eyewitness statement. Under each number of participant votes is the percentage of the group that verdict makes up.

Table 10. Observed and Expected Frequencies by Evidence Supporting Eyewitness.

	Guilty	Not Guilty
Group One (Evidence Supports; No TED Talk)	38 (36.9)	11 (12.1)
Group Three (Evidence Supports; TED Talk)	17 (18.1)	7 (5.9)
Resulting Chi-Squared Value		0.4

Note: This table displays what verdict the participants rendered by group. This table specifically looks at the groups in the condition where the evidence supported the eyewitness statement. Under each number of participant votes is the expected frequency used to determine the chi-squared value.

Table 11. Verdict by Evidence Not Supporting Eyewitness.

	Guilty	Not Guilty	Total
Group Two (Evidence Does Not Support; No TED Talk)	34 63%	20 37%	54
Group Four (Evidence Does Not Support; TED Talk)	24 83%	5 17%	29
Total	58 70%	25 30%	N = 83

Note: This table displays what verdict the participants rendered by group. This table specifically looks at the groups in the condition where the evidence did not support the eyewitness statement. Under each number of participant votes is the percentage of the group that verdict makes up.

Table 12. Observed and Expected Frequencies by Evidence Not Supporting Eyewitness.

	Guilty	Not Guilty
Group Two (Evidence Does Not Support; No TED Talk)	34 (37.7)	20 (16.3)
Group Four (Evidence Does Not Support; TED Talk)	24 (20.3)	5 (8.7)
Resulting Chi-Squared Value		3.44

Note: This table displays what verdict the participants rendered by group. This table specifically looks at the groups in the condition where the evidence did not support the eyewitness statement. Under each number of participant votes is the expected frequency used to determine the chi-squared value.

Table 13. Chi-Squared Analysis by Group.

	Statistical Test Values	p	Effect Size
All Groups with Results Split by Verdict	$\chi^2 (3, N = 156) = 4.65$	.199	.10
No TED Talk Groups Split by Verdict (G1, G2)	$\chi^2 (1, N = 103) = 2.53$	.111	.16
TED Talk Groups Split by Verdict (G3, G4)	$\chi^2 (1, N = 53) = 1.11$	.292	.14
Supporting Evidence Groups Split by Verdict (G1, G3)	$\chi^2 (1, N = 73) = 0.4$	.527	.07
No Supporting Evidence Groups Split by Verdict (G2, G4)	$\chi^2 (1, N = 83) = 3.44$	.063	.20

Note: This table displays the Chi-Squared values derived by group. Effect size is calculated using Cramer's V for Chi-Squared Analysis.

As the initial data suggests, the groups were taken all together before being separated by their like independent variables. Intrigued by the outcomes of the dataset, I went back to the groups and decided to split them in one more way—by combining the opposite groups to see if there were any significant difference in the responses. I took the No TED/No Supporting Evidence group (Group 2) and compared it to its opposite with the TED/Supporting Evidence group (Group 3). I then looked at the No TED/Supporting Evidence group (Group 1) versus the TED/No Supporting Evidence group (Group 4).

While Group 2 chose to convict 63% of the time, Group 3 convicted at a rate of 71% (see Tables 14 & 15). Additionally, while Group 1 chose to convict 78% of the time, Group 4 convicted at a rate of 83% (see Tables 16 & 17). Identical to the first round of analyses, after the critical values were determined, the p-values were calculated along with the effect size using Cramer's V for chi-squared analysis. When the groups were split by opposite independent variables, there was no difference between groups. For Group 2 and 3 analyses, ($\chi^2 [1, N = 78] = 0.46, p = 0.498$, Cramer's $V = .08$). For Group 1 and 4 analyses, ($\chi^2 [1, N = 78] = 0.28, p = 0.597$, Cramer's $V = .06$). Each of the chi-squared values, p-values, and Cramer's V values can be found in Table 18.

Table 14. Verdict by Opposites—Group 2 and 3.

	Guilty	Not Guilty	Total
Group Two (Evidence Does Not Support; No TED Talk)	34 63%	20 37%	54
Group Three (Evidence Supports; TED Talk)	17 71%	7 29%	24
Total	51 75%	27 35%	N = 78

Note: This table displays what verdict the participants rendered by group. This table specifically looks at the groups in the opposite conditions for each independent variable. Under each number of participant votes is the percentage of the group that verdict makes up.

Table 15. Observed and Expected Frequencies by Opposites—Groups 2 and 3

	Guilty	Not Guilty
Group Two (Evidence Does Not Support; No TED Talk)	34 (35.3)	20 (18.7)
Group Three (Evidence Supports; TED Talk)	17 (15.7)	7 (8.3)
Resulting Chi-Squared Value		0.46

Note: This table displays what verdict the participants rendered by group. This table specifically looks at the groups in the opposite conditions for each independent variable. Under each number of participant votes is the expected frequency used to determine the chi-squared value.

Table 16. Verdict by Opposites—Groups 1 and 4.

	Guilty	Not Guilty	Total
Group One (Evidence Supports; No TED Talk)	38 78%	11 22%	49
Group Four (Evidence Does Not Support; TED Talk)	24 83%	5 17%	29
Total	62 79%	16 21%	N = 78

Note: This table displays what verdict the participants rendered by group. This table specifically looks at the groups in the opposite conditions for each independent variable. Under each number of participant votes is the percentage of the group that verdict makes up.

Table 17. Observed and Expected Frequencies by Opposites—Groups 1 and 4.

	Guilty	Not Guilty
Group One (Evidence Supports; No TED Talk)	38 (38.9)	11 (10.1)
Group Four (Evidence Does Not Support; TED Talk)	24 (23.1)	5 (5.9)
Resulting Chi-Squared Value		0.28

Note: This table displays what verdict the participants rendered by group. This table specifically looks at the groups in the opposite conditions for each independent variable. Under each number of participant votes is the expected frequency used to determine the chi-squared value.

Table 18. Chi-Squared Analysis by Opposite Groups.

	Statistical Test Values	p	Effect Size
Opposite Groups Split by Verdict (G2, G3)	$\chi^2 (1, N = 78)$ = 0.46	.498	.08
Opposite Groups Split by Verdict (G1, G4)	$\chi^2 (1, N = 78)$ = 0.28	.597	.06

Note: This table displays the Chi-Squared values derived by independent variable group opposites. Effect size is calculated using Cramer's V for Chi-Squared Analysis.

Chapter IV

Discussion

The purpose of this study was to gain a better understanding of juror decision making and what it would take to convince a jury to change the weight they give an eyewitness statement. This study specifically aimed to manipulate the juror's decision-making process by introducing an expert's perspective on the information that was presented in the form of a mock script of an attack. Furthermore, with previous research indicating the confidence of an eyewitness as being one of the most compelling reasons to believe their testimony (Brewer & Burke 2002; Krug, 2007), the present research held that confidence at a constant to discover if it was possible to introduce scientific evidence to jury members in order to circumvent this paradigm. While the current research intended to uncover a path that combined juror education with informed decision making, it instead revealed a more pressing issue which is that in the face of scientific evidence along with expert testimony, jurors are still more inclined to side with a confident eyewitness regardless of the trial facts that directly oppose their statements.

When looking specifically at the groups that were exposed to the conditions in which the evidence was in direct opposition to the eyewitness statement, there was a 20 percent difference in the guilty verdicts. Though the participant numbers for Group 4 were roughly half compared to Group 2 due to the randomized grouping in Qualtrics, the percentage of those willing to convict shows an inverse correlation to what was initially hypothesized. Because the groups with the largest range in conviction decisions happened to have the same opposing evidence independent variable, that IV level is controlled and we can look to the only variable that separates Groups 2 and 4—the exposure to the expert testimony in the form of Dr. Thomas Albright's TED Talk. Albright specifically mentions the case of Uriah Courtney in which the

role of visual information processing led to Courtney being misidentified as the assailant for a crime he did not commit. In his case example, Albright explains how poor illumination in the form of shadows even during the day can lead to uncertainty in the perceptual field and cause identification errors. In the mock script created by the current researcher, the assailant was intentionally situated inside of their vehicle for the entire duration of the crime to simulate the shadows used in Albright's example. This specific piece of evidence was included to introduce doubt about the capability of the script's eyewitness statement and identification. However, the group that received this information (Group 4) chose to convict at a rate that was 20 percent higher than the group that did not receive this information (Group 2).

As a result, the data from the above Groups (2 and 4), were the only groups to yield significant results ($p < .10$), indicating that even with an expert's description of the potential for errors in Group 4, jurors are still more likely to convict when the eyewitness is confident. It is important to note that though Group 2 and 4's data set had a p-value of ($p = 0.063$), no group produced results that were below the typical significance threshold for psychological data ($p < .05$). This implies that a stronger intervention is needed in the future to overcome a juror's tendency to overestimate the validity of an eyewitness statement even when the evidence of the trial is in direct opposition to their claims.

The hypothesis that mock jurors exposed to expert witness testimony on the limitations of eyewitness accounts will be less likely to convict has been rejected based on the data. Not only did the jurors exposed to expert witness testimony and trial facts inconsistent with eyewitness testimony not convict less than their counterparts, but the jurors in this designated group also convicted at a higher percentage than all of the other groups. The only time the results were generally aligned with the researcher's hypothesis was when Groups 1 and 3 were compared—

the groups in which the evidence supported the eyewitness statement. Group 1 was not exposed to the TED Talk and chose to convict 78 percent of the time, while Group 3 was exposed to the TED Talk and chose to convict only 71 percent of the time. While this trend is in line with the initial ideology behind the hypothesis, the differences between the groups did not yield significant results and are therefore unable to be fully analyzed.

General Discussion

Given the lack of available answers to the study questions, it is clear that there is a need for answers in the field. While the current study did not yield significant results in the way the researcher had hoped, the results support the reasoning behind investigating this question in the first place. Jurors continuously place an overwhelming weight on eyewitnesses' statements and identifications, even in the face of conflicting trial evidence and expert testimony. What solution, then, is available so individuals like Cotton and Courtney are not misidentified due to eyewitness mistakes?

These results strongly imply that a video of an expert providing scientific background on psychological concepts and issues is not enough to sway potential jury members. Is it possible that changing the mode of stimulus would be enough to capture the juror's attention so that they are able to remember and recall the limitations of eyewitness testimony when it is time to render a verdict? Judges use their instructions to guide jury members when the time for deliberation comes; can an expert do the same with their scientific evidence? While the idea has merit, asking lay people to interpret scientific evidence on a piece of paper is problematic in that their interpretations of the subject matter may vary greatly. This is the same issue that begged the questions that informed this thesis—how should lay people know better when they have not had the education and training required for that level of scientific knowledge? Simply giving people

information and hoping they understand it is not the same as having an expert teach them the materials while providing tangible examples. While Thomas Albright's lecture was used to do just that for the current research, it was not enough. So, does the imagery have to be more compelling, or perhaps more applicable?

Limitations

There are at least three potential limitations concerning the results of the study. A first limitation concern is that the group numbers were extremely different. This was a result of the randomization of participants into groups through Qualtrics's randomizer, which was further exacerbated by the unequal number of participants after manipulation checks for each group. Groups 1 and 2 only had one manipulation check to contend with due to the nature of their conditions. Their only intervention was the script, therefore they only had one question they had to pass before being allowed access to the rest of the survey questions. Groups 3 and 4 had two interventions—the script and the TED Talk, which led to them having to answer two questions correctly in order to gain access to the rest of the survey. This caused an additional round of people to be thrown out of Groups 3 and 4—the groups that already had less numbers from the beginning due to the Qualtrics's randomization. At one point in the analyses, it was decided that the researcher would go back and look at all the verdicts given after the first manipulation check to see if or how that affected the results in anyway; however, because of the configuration of the survey, when participants answered the manipulation check incorrectly, they were taken to the end of the survey and bypassed all questions concerning a verdict, making those additional analyses not possible. In the future, the investigator would switch the order of the questions for the sake of being able to collect those data points while still utilizing the manipulation check to ensure the participants were paying attention to the study stimuli.

A second potential limitation is that this sample was derived from an online database via MTurk. While the manipulation checks were utilized to determine if a participant was paying attention or not, it is still possible that they were not fully attending to the presented materials. A way around this issue for any follow up studies is to conduct this research as an in-person study. Even having participants complete the same exact survey but having them do so in-person with a researcher in the room “over-seeing” the process could be enough to ensure they are attending to the information better than this first group. Taking this a step further, researchers could have participants in the associated conditions listen to a live lecture on eyewitness memory errors before receiving the script and taking the survey. This would test the video format of receiving expert testimony against receiving it in-person as a juror would in the courtroom. Ideally, investigators would be able to test both stimuli against each other in the same study to answer the question of which format is best received by participants.

A final limitation is that demographic information was not requested in order to best protect the participants. While this is, and will always be, the most important aspect of research, being able to have specific knowledge of the demographic information would have been useful in determining any trends in the decision-making processes of the participants. If the researcher were to follow the proposed study in the above paragraph, they could also take the demographic information for the same purpose. Because this survey was distributed online via MTurk, the researcher wanted to be especially careful with the identities of the participants due to their information being attached to an IP address and their Amazon account. As a result, the investigator did not ask for anything that would further identify the participants and immediately deleted the IP information and Amazon IDs. If the research were done in person, the investigator could collect this information without needing to be mindful of their internet trail.

Future Directions for the Field

Despite the above limitations, these results suggest several theoretical and practical implications. Theoretically, there is a gap in our field when it comes to educating our jurors about eyewitness errors. Research needs to continue to explore this avenue of thought in order to better understand the ways in which our jurors deliberate before coming to a decision in the courtroom. There is a world of knowledge in psychology about errors made in the courtroom, but if we cannot relay that information to the people making life-altering decisions, we are coming up short. Practically, people are being affected by these shortcomings. With the Innocence Project, and other organizations like it, gaining more and more business, we are left to see more and more lives being upended by eyewitness errors. Researchers have to find a way to close the gap between academia and jurors in order to help those at the mercy of the law.

In an ironic twist of fate, I was called to be in a jury pool last month. While I was not selected by the prosecuting lawyers, I was in the gallery long enough to hear the lawyers tell the jury members that they already had everything they needed in order to evaluate the credibility of an eyewitness statement, stating that, “good ole common sense,” was the only requirement. This is the extent of our jurors’ misinformation at the present moment. It is the researcher’s hope that this research and future research will be able to debunk that statement while providing the information needed to make a difference in the lives of others.

References

- Albright, T. D. (2017). Why eyewitnesses fail. *Proceedings of the National Academy of Sciences*, 114(30), 7758–7764. <https://doi.org/10.1073/pnas.1706891114>
- Benton, T. R., Ross, D. F., Bradshaw, E., Thomas, W. N., & Bradshaw, G. S. (2006). Eyewitness memory is still not common sense: Comparing jurors, judges and law enforcement to eyewitness experts. *Applied Cognitive Psychology*, 20(1), 115–129. <https://doi.org/10.1002/acp.1171>
- Brewer, N., & Burke, A. (2002). Effects of testimonial inconsistencies and eyewitness confidence on mock-juror judgments. *Law and Human Behavior*, 26(3), 353–364. <https://doi.org/10.1023/A:1015380522722>
- Deffenbacher, K. A., Bornstein, B. H., Penrod, S. D., & McGorty, E. K. (2004). A Meta-Analytic Review of the Effects of High Stress on Eyewitness Memory. *Law and Human Behavior*, 28(6), 687–706. <https://doi.org/10.1007/s10979-004-0565-x>
- Gomes, D. M., Stenstrom, D. M., & Calvillo, D. P. (2016). Examining the judicial decision to substitute credibility instructions for expert testimony on confessions. *Legal and Criminological Psychology*, 21(2), 319–331. <https://doi.org/10.1111/lcrp.12068>
- Innocence Project. (2021, November). *Eyewitness Identification Reform*. <https://innocenceproject.org/eyewitness-identification-reform/>
- Krug, K. (2007). The relationship between confidence and accuracy: Current thoughts of the literature and a new area of research. *Applied Psychology in Criminal Justice*, 3(1), 7-41.
- Magnussen, S., Melinder, A., Stridbeck, U., & Raja, A. Q. (2010). Beliefs about factors affecting the Reliability of eyewitness testimony: A Comparison of judges, jurors and the general public. *Applied Cognitive Psychology*, 24(1), 122–133. <https://doi.org/10.1002/acp.1550>
- State v. Cotton, 351 SE 2d 277 - NC: Supreme Court 1987
https://scholar.google.com/scholar_case?case=712978980538113963
- Waschenfelder, T. (2020, November 19). What Is Authority Bias? Wealest.
<https://www.wealest.com/articles/authoritybias#:~:text=Authority%20is%20our%20%20natural%20tendency%20to%20follow%20the%20leader.&text=You%20see%20%20Authority%20figures%20everywhere,then%20again%20as%20an%20adult.>
- Young, S. G., Hugenberg, K., Bernstein, M. J., & Sacco, D. F. (2012). Perception and Motivation in Face Recognition: A Critical Review of Theories of the Cross-Race Effect. *Personality and Social Psychology Review*, 16(2), 116–142. <https://doi.org/10.1177/1088868311418987>

Works Consulted

- Abshire, J., & Bornstein, B. H. (2003). Juror Sensitivity to the Cross-Race Effect. *Law and Human Behavior*, 27(5), 471–480.
- Albright, T. D. (2017). Why eyewitnesses fail. *Proceedings of the National Academy of Sciences*, 114(30), 7758–7764. <https://doi.org/10.1073/pnas.1706891114>
- Bornstein, B. H., & Greene, E. (2011). Jury Decision Making: Implications For and From Psychology. *Current Directions in Psychological Science*, 20(1), 63–67. <https://doi.org/10.1177/0963721410397282>
- Devenport, J. L., Penrod, S. D., & Cutler, B. L. (1997). Eyewitness identification evidence: Evaluation commonsense evaluations. *Psychology, Public Policy, and Law*, 3(2–3), 338–361. <https://doi.org/10.1037/1076-8971.3.2-3.338>
- Fisher, R., & Mitchell, G. (2009). The Relation between Consistency and Accuracy of Eyewitness Testimony: Legal versus Cognitive Explanations. In *Handbook of Psychology of Investigative Interviewing: Current Developments and Future Directions* (pp. 121–136). <https://doi.org/10.1002/9780470747599.ch8>
- Jones, A. M., Bergold, A. N., Dillon, M. K., & Penrod, S. D. (2020). Comparing the effectiveness of Henderson instructions and expert testimony: Which safeguard improves jurors' evaluations of eyewitness evidence? *Journal of Experimental Criminology*, 13, 29–52. <https://doi.org/10.1007/s11292-016-9279-6>
- Kassin, S. M., & Barndollar, K. A. (1992). The Psychology of Eyewitness Testimony: A Comparison of Experts and Prospective Jurors. *Journal of Applied Social Psychology*, 22(16), 1241–1249. <https://doi.org/10.1111/j.1559-1816.1992.tb00948.x>
- Laub, C., & Bornstein, B. H. (2008). Juries and Eyewitnesses. In B. Cutler, *Encyclopedia of Psychology and Law*. SAGE Publications, Inc. <https://doi.org/10.4135/9781412959537.n153>
- Luus, C. A. E., & Wells, G. (1994). The Malleability of Eyewitness Confidence: Co-Witness and Perseverance Effects. *Journal of Applied Psychology*, 79, 714–723. <https://doi.org/10.1037//0021-9010.79.5.714>
- Macrae, C. N., & Lewis, H. L. (2002). Do I Know You? Processing Orientation and Face Recognition. *Psychological Science*, 13(2), 194–196. <https://doi.org/10.1111/1467-9280.00436>
- Meissner, C. A., & Brigham, J. C. (2001). Thirty years of investigating the own-race bias in memory for faces: A meta-analytic review. *Psychology, Public Policy, and Law*, 7(1), 3–35. <https://doi.org/10.1037/1076-8971.7.1.3>

- Memon, A., Mastroberardino, S., & Fraser, J. (2008). Münsterberg's legacy: What does eyewitness research tell us about the reliability of eyewitness testimony? *Applied Cognitive Psychology*, 22(6), 841–851. <https://doi.org/10.1002/acp.1487>
- Schacter, D. L. (1999). The Seven Sins of Memory: Insights From Psychology and Cognitive Neuroscience. *American Psychologist*, 22.
- Sundby, S. E. (1997). The Jury as Critic: An Empirical Look at How Capital Juries Perceive Expert and Lay Testimony. *Virginia Law Review*, 83(6), 1109–1188. <https://doi.org/10.2307/1073729>
- van Es, R. M. S., Kunst, M. J. J., & de Keijser, J. W. (2020). Forensic mental health expert testimony and judicial decision-making: A systematic literature review. *Aggression and Violent Behavior*, 51, 101387. <https://doi.org/10.1016/j.avb.2020.101387>
- Wells, G. L., Memon, A., & Penrod, S. D. (2006). Eyewitness Evidence: Improving Its Probative Value. *Psychological Science in the Public Interest*, 7(2), 45–75. <https://doi.org/10.1111/j.1529-1006.2006.00027.x>
- Wilson, J. P., Hugenberg, K., & Bernstein, M. J. (2013). The Cross-Race Effect and Eyewitness Identification: How to Improve Recognition and Reduce Decision Errors in Eyewitness Situations. *Social Issues and Policy Review*, 7(1), 83–113. <https://doi.org/10.1111/j.1751-2409.2012.01044.x>