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How Psychology's Empirical Results Can Benefit the Criminal Justice System: Expert
Testimony

A thesis
presented to
the faculty of the Department of Criminal Justice and Criminology
East Tennessee State University

In partial fulfillment
of the requirements for the degree
Master of Arts in Criminal Justice and Criminology

by
Ford Charles McCurry
May 2013

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Keywords: eyewitness testimony, expert witness testimony, eyewitness recall activity

ABSTRACT

How Psychology's Empirical Results Can Benefit the Criminal Justice System: Expert

Testimony

by

Ford Charles McCurry

Brigham and Bothwell (1983) claimed that jurors have a scientifically incorrect view of eyewitness testimony. The purpose of this study was to examine the most beneficial way to assist the jury in dealing with eyewitness testimony. Duckworth, Kreiner, Stark-Wroblewski, and Marsh (2011) applied interactive participation in an eyewitness activity and expert testimony to a mock-jury dealing with eyewitness testimony and found that those who participated in the activity had significantly fewer convictions. The methodological framework of the Duckworth et al. study was applied to East Tennessee State University criminal justice undergraduates. Although this study did not find any significant effects in hearing expert testimony on empirical findings regarding eyewitness testimony or participating in an individual recall activity, cross tabulation frequencies indicated a directional pattern of relationship when independent variables were compared to the control group.

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1 Corinthians 6:20

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CHAPTER 1

INTRODUCTION

The criminal justice system strives to protect the innocent and proportionally punish the offenders who have disrupted society. When a guilty person is sentenced and an innocent person is set free by the judge and jury within the courtroom, there is a sense of fairness being carried out by the criminal justice system. There is a feeling of security and assurance when an eyewitness claims to have seen someone commit the crime (Leippe, 1995). By having eyewitness testimony present in a case, there is greater comfort that the truth will be made known inside the courtroom. Eyewitness testimony is significant and important due to the ramifications that can stem from this type of evidence. Eyewitness testimony can be a means to ensure the guilty defendant will be prosecuted and convicted. There is a reassuring feeling inside the courtroom when a person claims to have witnessed an event because the desire rests upon achieving the truth in what happened concerning the court case (Leippe, 1995). However, it can also cause justice to be withheld if the eyewitness is unable to tell the truth for whatever reason. More disconcerting is that research has shown eyewitness testimony contains inaccurate reflections of what the witnesses claim happened (Huff, Rattner, & Sagarin, 1986), further confounding the issue. Believing false eyewitness testimony can lead to innocent people suffering a wrongful conviction and imprisonment for a crime they did not commit. For this reason, erroneous eyewitness testimony has caused serious focus to be placed upon this particular event within the courtroom.

When eyewitness testimony becomes a deciding factor in a courtroom verdict, many consequences rest on whether or not the testimony depicts what actually happened. Inaccurate eyewitness testimony may cause innocent people to lose their freedom, while allowing the

person responsible for the crime to escape his or her punishment (Brainerd & Reyna, 2005). People, for good or bad, draw a connection between an eyewitness's claim and the truth (Leippe, 1995).

Eyewitness Testimony

When eyewitness testimony becomes a factor in a court case, this allows the possibility of error in conviction. If there is inaccurate evidence in the testimony, it can lead to error in convicting the wrong person. Cases that led to exoneration of suspects are likely to have involved inaccurate eyewitness testimony that caused wrongful sentencing (Borchard, 1933; Connors, Lundregan, Miller, & McEwen, 1996; Gross, Jacoby, Matheson, Montgomery, & Patil, 2005). Flowe, Mehta, and Ebbeson (2010) analyzed the presence of eyewitness identification in 725 felony case convictions. Defendants who had eyewitness testimony linking them to a crime often received felony convictions (Flowe et al., 2010). Flowe et al.'s results are evidence of the impact eyewitness testimony can have on a courtroom decision.

Having an eyewitness testify toward a cause is one of the most powerful weapons concerning a courtroom case (Brandon & Davies, 1973). However, research has revealed eyewitness testimony as playing a significant role in wrongful sentencing (Gross et al., 2005; Scheck, Neufeld, & Dwyer, 2001). Yarmey (2001) claimed that erroneous eyewitness testimonies were the leading causes in wrongful convictions. According to the National Institute of Justice, during 1996, there were 28 wrongful convictions that used eyewitness testimonies (Kassin, Tubb, Hosch, & Memon, 2001). Connors et al. (1996) found that the 28 cases used DNA evidence to rebut the original eyewitness testimonies that resulted in a wrongful conviction. If not for DNA analysis, these individuals would have continued to serve a sentence due to inaccurate eyewitness testimonies (Connors et al., 1996). Although DNA testing

exonerated these people, their life has been forever impacted by false accusation from an eyewitness testimony.

Organizations have been formed to specifically address the correlation of eyewitness testimony and wrongful convictions, specifically the Innocence Project and the National Registry of Exonerations. According to the Innocence Project, eyewitness testimony is the leading cause in all exonerations that involved DNA analysis; nearly 75% of exonerated cases (Innocence Project, 1992). The University of Michigan Law School and the Center on Wrongful Convictions at Northwestern University School of Law have collaborated to put together a National Registry of Exonerations (Gross & Shaffer, 2012). The National Registry of Exonerations released its first report in June of 2012, which discussed information regarding the 873 exonerated cases from 1989 through 2012 (Gross & Shaffer, 2012). They found that 43% of the 873 exonerated cases were traced to incorrect eyewitness identification. This high percentage of error demonstrates a problem in evaluating eyewitness testimony as a reflection of the true event.

Assistance to a Jury on the Memory Process

A juror's reaction to eyewitness testimony is one problem that plays a role in wrongful convictions due to erroneous testimony. Wise, Dauphanais, and Safer (2007) emphasized the influence of eyewitness testimony within the courtroom because of the ramifications it can have upon a jury's decision. These ramifications include wrongfully convicting and sentencing of innocent people due to a jury believing an inaccurate eyewitness testimony. As a result of how influential and significant eyewitness testimony is to the criminal justice system, empirical studies have been conducted to try and find ways of improving a jury's ability to better judge eyewitness testimony in order to reduce the number of errors made relating to eyewitness testimony (Loftus & Monahan, 1980; Lindsey, Wells, & Rumpel, 1981; McClosky & Egeth,

1983). A jury may place too much faith in the eyewitness's testimony because of their opinion about how memory works (Brigham & Bothwell, 1983). Brigham and Bothwell (1983) claimed that jurors have a scientifically incorrect view of the eyewitness recall process. Jurors may not understand the scientific process of memory and, therefore, make wrong assumptions due to believing that an eyewitness recall will be a complete reflection of what truly happened. When an eyewitness gives his or her testimony, the jury is likely to believe it is an accurate reflection of what really happened (Brigham & Bothwell, 1983).

In order to better understand eyewitness testimony, it is useful to understand how memory works. The problem in convictions derived from erroneous testimonies inspired Elizabeth Loftus to begin one of her first publications on eyewitness testimony. *Eyewitness Testimony* (1979) was published to show the scientific breakdown on why so many eyewitness testimonies are often shown to be incorrect. Loftus (1979) brought attention to empirical studies on eyewitness testimony, which would in turn be applied inside the courtroom. Unless the members of the courtroom have prior knowledge about the scientific process of memory, then it is unrealistic to believe they will be able to accurately judge eyewitness testimony.

In order to better understand and gauge the accuracy of someone's eyewitness testimony, jurors needed to learn the fundamental stages of how memory occurs (Loftus, 1979). The memory process can be broken down into a three-step process: acquisition, retention, and retrieval (Loftus, 1979). Loftus (1979) used the process of memory to provide a foundation so that aspects of eyewitness testimony would have a point of reference for jurors. By understanding how memory works through acquisition, retention, and retrieval, it can serve as a way for jurors to have a sense of skepticism toward gauging eyewitness testimony as the complete truth. Skepticism will serve as a means for jurors not to automatically base their

decision on a person claiming to have witnessed an event. Instead, once the jurors are provided with information regarding the memory process, then they can apply this knowledge in judging the eyewitness testimony (Loftus, 1979). The goal of providing a jury with scientific evidence regarding the memory process is to better equip the individual jurors for analyzing eyewitness testimony.

The first stage of the memory process is known as acquisition, which is also known as the encoding process (Loftus, 1979). Encoding refers to the way the brain takes in information to be stored, such as the color of a person's hat (Loftus, 1979). The brain must encode information in order to recall it at later time. During the acquisition process, the brain chooses which aspects are most important to pay attention to while encoding the information (Loftus, 1979). The surrounding environment will often be filled with numerous pieces of information that the brain could focus on acquiring. Because of the high number of details, there are often many aspects that go unnoticed while encoding the event. The brain cannot focus on every detail, so the acquisition stage of encoding will usually focus on a small proportion of the actual event.

After the brain encodes the event, the information is then stored for retention (Loftus, 1979). The retention stage is the process of preserving the encoded information for however long it will be stored in the mind until asked to recall the event (Loftus, 1979). The retention stage undergoes more tension regarding the specific event that was encoded. Once the event has been acquired by the brain, there are chances that it can be manipulated by outside factors such as a personal bias from other people. If a personal bias, such as racial prejudice, from other people frame the discussion of the event, it can cause the person to question whether his or her acquisition of the event was true. An example of racial prejudice framing an event would be if another witness insists the person of a different race was the culprit in the crime only because of

his or her prejudice beliefs and not on what he or she actually saw, then the racial bias could cause additional witnesses to question what they saw. Depending on how influential the discussion is, the retention could significantly change the person's idea on the event he or she encoded during the acquisition stage.

The acquisition and retention stage serve to keep the information as accurate as possible for when it is needed (Loftus, 1979). The last stage, known as retrieval, is when the person is asked to give an account of the event or information (Loftus, 1979). The retrieval stage can be affected by the strength of the acquisition and retention stage. The better a person is able to encode and store an event will lead to a greater chance of a more accurate reflection of what occurred. The surrounding circumstances and other factors such as self-questioning the event at any stage of the memory process can cause inaccuracies during the recall process.

Memory recall can also be affected by the surrounding environment and the overall temperament of the person (Loftus, 1979). After Loftus established the three stage process of memory, she explained other factors that can affect the accuracy in recalling an event. Event factors surrounding the situation, such as the amount of time the witness is exposed to the event and the frequency of exposure, can play an influential role in decreasing the accuracy of recall, by affecting the acquisition process of memory. Highly salient details of an event can also affect the acquisition. Salience of detail could be whether or not the event has a high probability of being noticed. A large red hat in a crowd would be an example of a salient detail in an environment. The type of fact that the witness is asked to recall can also play a role in the probability of successful acquisition, retention, and retrieval. If the event details have a high probability of over or under estimation, such as weight, then the type of fact could be understood to have possibility of error. Loftus also pointed out that the amount of violence perceived in the

event could affect a person's ability to retain accurate details. Haber and Haber (2000) argued that the presence of a weapon or violence can cause a person to focus more upon what could potentially lead to harm, therefore lessening the person's ability to focus on other details of the situation.

Event factors are not the only agents that can affect the memory process. Factors that derive from the witness's state of mind can also influence the accuracy of memory (Loftus, 1979). Witness factors can include the amount of stress a person is under at the time of the event (Loftus, 1979). Greater stress can cause impairment for the memory process. Stress makes it more difficult to accurately acquire, retain, and recall information. Inherent factors such as personal bias can also be affected by a person's expectations of an event. When a person has preconceived prejudices concerning types of people and events, then his or her personal biases may get in the way of seeing the truth in the situation. The person may assume that the assailant in a robbery was of a certain class or race due to a personal bias that perceives that only certain classes or races would be involved in a robbery.

Memory can also be influenced by the depth of focus a person displays on the event. The depth of focus or type of perceptual activity a witness is going through during an event can affect how well it will be accurately recalled. When studying this phenomenon, Loftus (1979) used the Bower and Karlin (1974) study to explain the relationship of perceptual activity and the accuracy of recalling an event. In the study, one group was asked to judge the personality of an individual by only looking at a face, while another group was asked to judge the sex of a person (Bower & Karlin, 1974). The group that participated in personality judging scored higher when asked to recall the faces.

In conclusion, if jurors can be exposed to the elements of the memory process, it can provide greater hope in being able to decipher an eyewitness's testimony. By having a better understanding in how memory works and what elements can make it harder to remember information, the jury may be able to adequately decide whether the eyewitness testimony can be assumed as an accurate reflection of the event. Loftus (1979) argued that the first step in assisting the problem of inaccurate eyewitness testimony is educating the jury on scientific findings concerning how memory occurs. Providing scientific findings on memory to the members of the jury can help remove the problem of automatically believing an eyewitness is, in fact, accurate.

Purpose of the Study

The purpose of this study was to address the debate of incorporating expert testimony into the courtroom by providing a mock jury composed of East Tennessee State University undergraduate criminal justice students with expert testimony and participation in a related eyewitness recall activity to see if there would be an effect on their evaluation of hearing an eyewitness account. Jurors' final decisions of guilty or not guilty were evaluated after being provided with scientific findings on the process of memory regarding eyewitness testimony. The use of an interactive activity involving eyewitness recall's impact on the jury's final verdict was also addressed. The combined effect of hearing expert witness testimony and participation in an interactive recall activity was also evaluated. The literature suggests that interactive learning can have a more powerful impact than simply listening (Chickering & Gamson, 1987); therefore, this study combined the use of expert testimony exposure and participation in an interactive learning activity in order to see if there was an effect when both situations were given to participants.

Duckworth, Kreiner, Stark-Wroblewski, and Marsh (2011) conducted a study that tested the effect of presenting participants with a mock-trial to see whether expert testimony or an eyewitness activity would have a stronger effect on the final verdict of guilty or not guilty. Duckworth et al. had two independent variables: exposure to expert testimony and participation in an eyewitness identification activity. They predicted and confirmed that participation in the activity would show a significant relationship to how the mock-jury voted (Duckworth et al., 2011). This current study applied Duckworth et al.'s methodological framework to East Tennessee State University undergraduate criminal justice students. The impact of expert testimony compared to participation in an eyewitness activity when East Tennessee State University students were asked to render a verdict based upon eyewitness testimony was statistically measured.

Hypotheses

This question of whether it is effective to incorporate expert testimony in the courtroom was addressed in this study. The effect of expert testimony and the effect of participating in a hands-on eyewitness recall activity on mock jurors were statistically tested. The first set of experimental hypotheses were : H₁: there would be a significant difference the final decision of guilty or not guilty between the participants who were exposed to expert witness testimony compared to those in the control group, H₂: there would be a significant difference in the final decision of guilty or not guilty between the participants who participated in an eyewitness recall activity compared to the control group, and H₃: there would be a significant difference in the final decision of guilty or not guilty between the group that heard the expert witness testimony and participated in the eyewitness recall activity compared to the control group.

The effect of mock jurors finding helpfulness in hearing expert testimony and participating in the eyewitness recall activity was also statistically tested. The second set of experimental hypotheses were: H₄: the mock jurors would find helpfulness of hearing expert witness testimony to be statistically significant in providing assistance to their verdict when the group that only heard the expert witness testimony was compared to the control group, H₅: the mock jurors would find the helpfulness in participating in the eyewitness recall activity to be statistically significant in providing assistance to their verdict when the group that participated in the eyewitness recall activity was compared to the control group. These were based on the existing research results (Duckworth et al., 2011; Loftus, 1980).

CHAPTER 2

LITERATURE REVIEW

Loftus (1979) conducted an empirical study that showed the overall weight of having eyewitness testimony presented in a courtroom trial. Participants were given a courtroom scenario of a robbery-murder trial, and then were divided into three separate conditions (Loftus, 1979). In the first condition, participants were only given the physical evidence regarding the crime. The second condition provided physical evidence and an eyewitness. The participants in the first group had an 18% conviction rate, while the second group had a 72% conviction rate. However, in the third condition the eyewitness's testimony was discredited by the defense attorney, but the group still had a 68% conviction rate. The comparison of conviction rates among the groups with an eyewitness increased dramatically. This experiment showed that the mere presence of an eyewitness raises conviction rates, whether it is an accurate testimony or not. Therefore, it makes sense to seek the most effective way to make sure a jury is able to accurately decide whether or not an eyewitness testimony can be believed. Empirical findings are an attempt to establish effective conclusions regarding the use of expert assistance in helping a jury deal with eyewitness testimonies.

Expert Testimony as Assistance to the Jury

Empirical findings showed that juries do have trouble in detecting whether an eyewitness is giving an accurate account of what actually happened (Loftus & Monahan, 1980; Lindsey et al., 1981). McClosky and Egeth (1983) discussed the solution to the problem associated with the notion of juries being more likely to believe an eyewitness solely based on good hope that the witness is telling the truth and that the memory is more than likely going to be accurate. The solution to this problem was to provide the jury with an expert who deals with the scientific

findings regarding the memory process (McClosky & Egeth, 1983). In order to provide the jury with more information that may help them be able to better differentiate between accurate and inaccurate eyewitness testimony, there has been a movement to encourage the participation of psychologists inside the courtroom (McClosky & Egeth, 1983). Because experimental and cognitive psychologists have firsthand exposure to research and empirical findings regarding the memory process, eyewitness testimony, and factors that can affect accurate or inaccurate recall, they are wanted to testify to the jury as an expert on eyewitness testimonies. Expert testimony by a psychologist refers to someone that is qualified to inform the jury and judge on empirical findings, theories, and processes that the community of researchers and professionals have reached an overall agreement on concerning the process of memory and eyewitness testimony (Leippe, 1995).

The psychologist, also known as the expert witness, would explain to the court how memory truly works and explain certain factors that are likely to impede the memory process (Wise et al., 2007). The expert witness testimony is to solely inform the court by providing reliable and valid results of the scientific community's findings on memory. The expert witness does not offer opinions about the current case in the courtroom (Cutler et al., 1989). The use of incorporating expert witness into the courtroom to provide the jury with professional and scientific evidence developed as a way to give juries a way to better understand the components of eyewitness testimony so that they would have the tools to better differentiate between a witness who is giving an accurate account of an eyewitness event or a witness who is not providing the truth.

Legal Rulings Involving Expert Testimony

The notion of providing expert testimony to a jury was transferred from the research setting in academia to the courtroom. *Frye v. United States* (1923) established that testimony is admissible if there is established acceptance of a particular theory or evidence. Rule 702 of the Federal Rules of Evidence eventually became the legal standard regarding allowing expert testimony. According to Rule 702 of the Federal Rules of Evidence, the court has the right to allow the admission of a qualified expert witness if the testimony is directly related from the field of experience that can impact the ruling of a case. *Daubert v. Merrell Dow Pharmaceuticals, Inc.* (1993) addressed the admission of expert testimony in federal courts if the judges believe the expert can testify directly based upon established scientific evidence that can relate specifically to the case at hand. It is up to the discretion of the judge as to whether the expert will be giving testimony directly from scientific knowledge, and then whether or not the scientific input is necessary for trying to reach the final verdict (*Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 1993).

If the judge allows the presentation of an expert witness, the expert is to raise awareness about the memory process by expanding on what the scientific research has found. Vidmar and Schuller (1989) refer to incorporating expert witness testimony as assistance from the scientific field. The psychologist's job is to bring awareness regarding the memory and eyewitness process, not personally evaluate the credibility of the eyewitness. The ultimate decision on whether to credit the eyewitness testimony is still placed upon the jury (Monahan & Walker, 1988). The expert is designed to help or provide clarity for the lay jury to better understand the eyewitness process (Monahan & Walker, 1988). The process of the jury involves taking into account what the eyewitness expert says about the process of memory and what factors could

cause a person to not accurately recall the event, and then applying this information when they directly evaluate the eyewitness testimony.

The problem with eyewitness testimony is that sometimes jurors will believe inaccurate observations and not believe witnesses who are actually telling the truth (McClosky & Egeth, 1983). McClosky and Egeth (1983) claim that the use of expert testimony is hopeful to inform jurors on factors that can cause inaccurate observations and lead to testimony that is actually false. The involvement of expert testimony moves to inform jurors on what should be relevant factors of focus in deciding whether or not to believe an eyewitness. McClosky and Egeth (1983) also support the incorporation of expert testimony from a psychologist based upon Ellison and Buckout's (1981) findings, in that there is a presumption of jurors being too ready to believe eyewitness testimony because they feel it is the truth when in fact many circumstantial factors that the jury is unaware of could play a role in the eyewitness being wrong. By informing the jury on the unreliability of eyewitness testimony, the expert testimony could help juries become more cautioned to believe someone solely because they claim it is true. Loftus (1979) encouraged incorporating a psychologists into the courtroom because they can help the jury better understand the memory process. Expert testimony would be a solution to a jury that does not have a lot of knowledge on how memory works.

Although it may seem straightforward and logical to use an expert witness to discuss eyewitness testimony findings and research, there is a debate on whether it is truly effective in the courtroom. In the case *People v. Gruzman* (1975), it was ruled against using expert testimony because the jurors are screened and explained about processes beforehand and that most people know that eyewitness testimony can be false. McClosky and Egeth (1983) made the argument that the when a jury makes a wrongful conviction and sentences an innocent person or

frees a guilty person because they believed a false testimony, then these situations cause society to demand an expert witness in order to control for this type of error within the criminal justice system. They relate this to one of the most famous criticisms of using expert testimony within the courtroom; skepticism (McClosky & Egeth, 1983). They brought up that by exposing a jury to expert testimony, it would increase the jurors' amount of skepticism to a point that they would become too afraid that they would be making a mistake if they reached a guilty verdict.

Opponents of expert testimony argued that expert witnesses will add skepticism to the extent that the jury loses its power of judgment. The jury may become so afraid that they are making a mistake in believing the eyewitness that they will significantly lower conviction rates in a way that would almost guarantee the defendant will walk away regardless of whether he or she was truly innocent or if he or she was guilty. Because of the argument regarding expert witnesses increasing the skepticism effect among juries, scientists and scholars conducted many empirical studies to see the effects of having an expert witness involved in the courtroom.

Empirical Findings Regarding Expert Testimony

Loftus (1980) wanted to work with supposed jurors and compare outcomes when exposed to expert testimony and the eyewitness testimony or jurors only exposed to eyewitness testimony. This was the better way to actually see the effectiveness of incorporating expert eyewitness testimony into the courtroom. Comparing actual case outcomes that were allowed expert testimony to cases that were not allowed would involve too many confounding variables, such as strength of the attorneys in fighting the case. In order to control for attorney interaction on a case, Loftus (1980) solely addressed the impact of having expert testimony exposed to the jury. The main effect of allowing expert testimony was investigated.

Loftus (1980) conducted two experiments regarding expert testimony. In her first experiment, there were two groups (Loftus, 1980). Both groups received evidence based upon an eyewitness testimony against a defendant, but one group was exposed to expert testimony on scientific findings regarding eyewitness testimony, while the other group did not have this exposure. The results showed fewer convictions for the group that was exposed to expert testimony. As was hypothesized by Loftus (1980), the group that heard an expert witness had fewer guilty verdicts. Based on the results of experiment one, Loftus (1980) concluded that exposing a jury to an expert witness may lead them to give more thought toward their final verdict by further analyzing if the actual witness was telling the truth.

Loftus's (1980) second experiment was designed to further analyze jury decisions and the effect of exposure to expert testimony. She wanted to see if jurors spent more time discussing or analyzing their final decision when they were exposed to expert witness testimony (Loftus, 1980). In experiment two, one group was given exposure to expert testimony and then came to their conclusion. The other group was not given exposure to expert testimony. The group exposed to expert testimony was recorded for how long they spent discussing and analyzing the information provided by the expert testimony. Results indicated that groups exposed to expert testimony took longer in discussing and reaching their final conclusion. Much like the first experiment, the second experiment showed that groups who were exposed to expert testimony had a lower conviction conclusion. The group with the expert witness exposure also had more people reach an undecided verdict. Loftus (1980) argued that failing to reach the conclusion of guilt could be attributed to the jury devoting more time analyzing the expert witness information. The hypothesis was confirmed in that there was a significant difference in a jury spending more time reaching a verdict when being exposed to an expert witness testimony.

Both of these experiments provided empirical results showing that expert witness testimony does have an influence on a jury (Loftus, 1980). The exposure to expert testimony in the first experiment produced fewer convictions, and the second experiment showed jurors spent more time deliberating a final verdict when they had been presented with expert testimony (Loftus, 1980). The lower convictions and more time in deliberation could have been attributed to expert witness causing an increased amount of skepticism in believing the eyewitness's testimony. However, Loftus argued that incorporating an expert witness is not to make the jury more skeptical in a way to automatically discredit the eyewitness testimony. The expert witness's role is to provide the jury with knowledge that increases awareness of certain factors that are significant influences in the overall eyewitness experience.

The Debate of Expert Testimony

A jury giving more thought toward their final verdict is not necessarily a bad implication. The results could be read in two different ways depending on whether a person is for or against the use of expert testimony within the courtroom. An argument for expert witness testimony based on the results of Loftus (1980) would be that the jury spends more time analyzing or discussing the information provided by the expert witness. If the jury is spending more time thinking about the eyewitness testimony findings regarding memory and factors that affect the memory process, then they will be more likely to spend more time trying to apply the expert's advice toward the eyewitness. Providing the jury with more information on the memory process from an expert could lead them to have a broader and more advanced understanding of eyewitness testimony, which could lead to the jury making a more educated final decision than if they were not exposed to the information provided by the expert.

However, people who do not support incorporating expert witness testimony into the courtroom would focus more upon the results of the juries having a lowered guilty conviction rate after being exposed to expert testimony. The group that was exposed to expert testimony in experiment one demonstrated a lowered conviction rate, which shows that there is some degree of skepticism effect that develops from expert testimony (Loftus, 1980). Opponents of expert testimony would argue that a jury does not need exposure to what an expert has to say regarding the memory process and eyewitness testimony because it will automatically make them skeptical to convict. Loftus's (1980) results did show a lower conviction rate, but it was not an extreme amount of decrease. More importantly, the exposure to expert testimony did not significantly lower the guilty conviction rate to the point that expert testimony would cause the jury completely abandon sentencing a defendant.

Critics of incorporating expert witness testimony into the courtroom not only use the skepticism effect as a reason, but they also argue that there is a difference in the experimental findings regarding eyewitness testimony compared to the actual courtroom (Leippe, 1995). There has been quite an area of devotion to eyewitness recall since the 1970s (Christiaansen, Sweeney, & Ochalek, 1983; Leippe, Wells, & Ostrom, 1978; Loftus & Greene, 1980; Loftus & Palmer, 1974). Many of these empirical findings have high reliability and high validity (Leippe, 1995). The question deals with the transfer from the scientific setting to the actual courtroom. The reluctance of opponents toward incorporating eyewitness testimony in the courtroom comes from the argument that there is a difference in the testing environment and the real world setting. However, even if there is difference in the testing compared to the real world setting, there is still more help than harm by knowing and explaining which and how certain factors are able to affect the eyewitness recall process. The majority of findings showed that there is a high error rate

when it comes to being able to accurately recall an eyewitness event. This high error rate provided the basis for continuing experiments for the generalizability in relating expert testimony in experimental settings to the real world.

One complaint about the generalizability aspect for the experimental atmosphere compared to the real world atmosphere is that the experiments use mainly college students who are not under the same degree of stress that the actual eyewitness endured (Leippe, 1995). However, Wells (1993) found that there was not an overwhelmingly change in effects for college students compared to nonstudent eyewitnesses. Loftus, Levidow, and Duensing (1992) found that college students had better accuracy in recall than anyone, which would actually support the generalizability of the classroom to the real world. If the experiments had a group that were shown to have stronger recall and still had a high recall error rate, then it is safe to assume that real world people would also have a similar recall rate.

Another argument against the generalizability of empirical findings is that the stress is far different in an actual event compared to an experimental setting. Goldstein, Chance, and Schneller (1989) claimed that the United States had over 78,000 trials in 1987 that significantly relied upon eyewitness testimony. They propose that if a mere 10% of these trials involved witnesses who were not put under a significant amount of stress, then that would have yielded around 8,000 cases that involved witness that were not traumatized through the event (Goldstein et al., 1989). People who argue against the use of expert testimony would be more likely to support the incorporation of the empirical evidence for these approximate 8,000 cases because both the college student participant and the actual eyewitness would not have been exposed to a high degree of real world stress, which would make the two groups more similar. This argument would mean that there would be little reason not to allow the use of expert testimony due to the

actual similarities between college students and the real witness, in that, there would not be a significant amount of stress placed on either group. This provides a strong argument that empirical findings discussed from expert testimony would have a greater similarity to cases where the eyewitness was not placed under a high amount of stress. However, there is still room for debate that in instances where the eyewitness was placed under a high amount of stress, there could be less of a similarity between empirical results and real world eyewitness events. Therefore, opponents of using expert testimony that informs a jury of empirical findings still argue that there is a greater chance the eyewitnesses were under different circumstances than the participants,

Leippe (1995) makes the argument that there is clearly a difference in real world scenarios where witnesses do face greater stress and more physical and mental strains than students in the classroom. However, there has not been empirical evidence collected that shows a significant difference in these two situations. There is not a great amount of evidence that clearly sways the scientific community that there are effects that take place in real world events that will alter and provide different findings than the empirical studies that have been conducted across the country. Because there is no solid evidence that supports a significant and clear difference between empirical experiments and the real world, it is safe to rely upon these experimental results as a basis of understanding and application toward real world problems and cases within the courtroom. That is essentially the purpose of incorporating an expert witness in the courtroom. The expert witness is supposed to provide understanding and expose the jury to information that may serve to aid them in their decision process when evaluating eyewitness testimony.

Opponents of expert witness testimony used in the courtroom argue that the jury does not need any help evaluating an eyewitness testimony, which would make expert testimony a waste of time and expense for the court. However, Wells, Lindsay, and Tousignant's (1980) results showed that there are variables that affect eyewitness testimony that go beyond the cognitive mind of the average jury. Expert testimony would help familiarize jurors with factors that are scientifically known to make recall more difficult (Wells et al., 1980). It would make sense to expose jurors to this information. McClosky and Egeth (1983) argue that the known variables do not need to be explained by a psychologist. They claim the average person is skeptical when confronted with the amount of time that lapsed between the episode and the report and also the amount of stress that the eyewitness was under during the event (McClosky & Egeth, 1983). Their findings suggest that it may be helpful in having an expert remind the jury of the intricacies concerning factors that impede memory, but it is not needed because of other employers of the criminal justice system, such as the lawyers. They argue that a defense attorney would certainly already cover the angles of the testimony that could be causing an inaccurate recall. If the testimony had any of the factors, such as dark lighting, extreme stress, race identification, or a weapon involved, the defense would have more than likely already used this against the witness. McClosky and Egeth find it redundant to allow a psychologist to explain the scientific aspect behind these situational stresses on memory when the court already has an attorney provided for the defendant.

Empirical research suggests that the jury does need help with being exposed to the effects of influential factors on eyewitness memory. Deffenbacher and Loftus (1982) demonstrated that lay people do not naturally know certain information that could be helpful regarding memory and eyewitness testimony. They gave college students and nonstudents a survey regarding variables

that play a substantial role in affecting memory recall (Deffenbacher & Loftus, 1982). The results showed that it is not common knowledge of the known effects for certain factors that pertain to or hinder eyewitness memory.

Yarmey and Jones (1983) found similar results supporting the notion that the jury needs the exposure of an expert witness on factors that relate and influence eyewitness recall. They found that even law students and legal professionals do not automatically know the significant impact of certain variables on memory (Yarmey & Jones, 1983). Kassin and Barndollar (1992) conducted a study that involved the reliable factors agreed upon by the experts in the Kassin, Ellsworth, and Smith (1989) study, which showed that there was a significant difference about the consensus of these factors between the experts and lay people. The factors were what the psychology field agreed upon as being clearly significant to the memory process (Kassin et al., 1989). Stress, racial factors, the length between the time of event and the time of testimony, the wording of questions, and unconscious transference were some of the factors that the participants were discussing (Kassin & Barndollar, 1992). Some participants did not even agree that the factors were even legitimate in affecting eyewitness testimony, even though the scientific community had come to agree on them (Kassin & Barndollar, 1992). These findings refute the argument that the jury already knows these factors that influence the accuracy of eyewitness testimony. The findings refute the idea that including an expert witness to inform the jury on established scientific findings is a waste of the court's time. Based upon these results, the jury does need an expert witness to address and educate the jury on how certain factors do affect memory. Including an expert witness would better educate the jury in regards to eyewitness testimony.

Refuting Opponents of Expert Testimony

In order to better understand the ongoing battle about having an expert witness incorporated into the courtroom or not allowing an expert to testify, Leippe (1995) highlighted the main arguments against expert testimony in order to better weigh the two opinions. Leippe (1995) groups arguments against expert witness testimony into five main points. 1. The scientific community has not reached a concrete conclusion on whether the findings regarding eyewitness identification are sufficiently reliable and valid. 2. Juries do not need to be informed about skepticism regarding eyewitness testimony. 3. By incorporating expert testimony, the jury loses some of its responsibilities and privileges of deciding on their own the basis of whether or not the witness is telling the truth. 4. Jurors would develop more skepticism as a result of the expert's testimony on the many influences and faults of eyewitness testimony. 5. The court already provides means of examining the eyewitness testimony by the use of lawyers.

Kassin et al. (1989) conducted a survey of 63 researchers devoted to or having significant impact in the field of expert eyewitness testimony. These factors that impede or play a significant role in the eyewitness process include the wording of questions, lineup instructions, postevent information, accuracy confidence, attitudes and expectations, exposure time, unconscious transference, show-ups, forgetting curve, cross-racial identification, lineup fairness, time estimation, and the overall stress of the situation (Kassin et al., 1989). The survey revealed that there is a degree of consensus in the field regarding the factors that are pertinent to eyewitness testimony should be discussed on the witness stand, which supports that there is a scientific consensus agreement that is relied upon by the expert witnesses. This is important because it gives support to the judge's discretion that what the expert witness says is a reflection of the consensus regarding eyewitness testimony in the field. This 70% agreement on what

factors are scientifically-grounded enough to talk about on the stand gives evidence that the expert witness is reflecting the scientific standards of their respected community and not incorporating personal beliefs and biases regarding eyewitness testimony.

The judge does not want to worry about deciding if the expert witness is providing biases or scientific facts regarding factors influencing eyewitness testimony. It is both advantageous for the judge and jury if the expert witness is only providing information about factors affecting memory that the scientific community regards as generally accepted. Leippe (1995) claimed that the role of the expert witness is to essentially provide information to the jury and judge regarding eyewitness testimony and memory that is based on the theoretically and empirically supported notions that the majority of the scientific community has agreed upon. The Kassin et al. (1989) study provided evidence in favor of expert testimony because the scientific community does have a general consensus on what factors affect the memory process and eyewitness testimony.

Leippe (1995) analyzed one of the main arguments against using the expert witness in the courtroom, namely the amount of skepticism that could be adopted by the jurors as a result of hearing the scientific evidence that more than likely highlights the error rates of memory recall. Woocher (1986) claims that by exposing the jury to the expert witness, it could completely deflate the confidence that the jury has in being able to accurately tell if the eyewitness is telling the truth. The bombardment of negativity regarding memory, recall, or eyewitness testimony from the expert witness could be too much for the jury to cognitively handle and still be able to reach a verdict that is not based on fear of mistakenly convicting someone (Woocher, 1986). Making the jury completely unsure because they are afraid would not be beneficial for the court because it takes away the sense of decision by a jury of peers. If they are too afraid to actually make a decision of guilty because they fear that they are not smart enough to see the situation as

the expert witness would, then it more than likely lowers the guilty rate. However, lowering the guilty rate because of fear is not justice.

The skepticism effect argument does make sense in having the possibility of making the jury too afraid to make a mistake. However, the goal of the expert witness is not to make the jury afraid or significantly increase skepticism toward the eyewitness (Loftus, 1979). Instead, it is to make the jury cognizant that there are certain factors that can impede the accuracy of eyewitness testimony. Expert witness testimony is designed to be an aid for a jury that is exposed to eyewitness testimony.

Leippe (1994) argues that jurors may have a false notion of ideas that consider the accuracy of an eyewitness to be true. A considerable amount of research has been dedicated to studying the impact of juror decision about the credibility of an eyewitness. The majority of results show that jurors are not good at distinguishing between an eyewitness who is telling the truth or not telling the truth (Lindsay, Wells, & Rumpel, 1981; Wells et al., 1981; Wells & Leippe, 1981; Wells, Lindsay, & Ferguson, 1979). Wells and Murray (1984) found that the level of confidence a witness appeared to have in the accuracy of his or her testimony had a positive correlation with the jury believing the witness's account. Witnesses who were not telling the truth were voted as telling the truth, ranging up to 80% of the participant jurors. This gives evidence that expert testimony should be used because jurors tend to put too much faith in a witness. Other studies have also shown that decisions on believing a witness are directly influenced by the perceived level of confidence (Cutler et al., 1988; Whitley & Greenberg, 1986). These results also had another important factor because of the targeted participants. College students, nonstudents, police officers, and attorneys showed that a witness's degree of confidence in testimony directly affects the person's belief in accuracy of the witness. This is

significant to applying expert testimony in the courtroom because of whom these studies incorporated. They targeted a broader audience, which is more likely to represent a jury. If a broader audience has trouble in detecting the accuracy of the witness because their verdict is based upon confidence, then a jury is more than likely going to display similar results in their verdict. Leippe (1995) argues that the pattern of jurors being swayed by an eyewitness's confidence in accuracy is one of the strongest reasons why there is a need to expose the jury to an expert witness. . An eyewitness can have a significant amount of confidence but name the wrong person as being guilty (Goodman & Loftus, 1992). People have shown to have unshakable convictions that they know exactly what they remember even if there is evidence that clearly proves the testimony is wrong. An expert witness can explain how factors such as confidence do not guarantee that a witness is telling the truth. The expert witness could explain what the scientific field has to say about the correlation of the amount of confidence and the accuracy of an event.

Leippe (1995) also provided evidence that the courtroom operations of cross examination are not reliable enough to allow the jury to see if the eyewitness is accurately recalling the event. In fact, the opposite can occur when a witness is cross examined (Wells & Leippe, 1981). More than likely, the witness has been told to stick to the story and details as much as possible so that there will be little chance of the jury and attorney finding holes in the eyewitness testimony. If the witness is able to make it through the cross examination, then it gives the jury more confidence that the eyewitness may be telling the truth. Leippe (1980) showed that through the repeated rehearsal of events, a person is likely to gain more confidence. This means that the witness could not have the true story, but through enough rehearsal, the witness will more than likely develop a higher sense of confidence. The development and demonstration of confidence

in the eyewitness can lead to the jury being swayed (Cutler et al., 1988; Whitley & Greenberg, 1986). This evidence would also argue for the incorporation of expert witness because the cross examination of the courtroom may not provide enough or the right kind of analysis that will allow the jury to understand that the confidence level does not always positively correlate with the degree of accuracy in the eyewitness's recall.

Maass, Brigham, and West (1985) conducted a study that was similar to Loftus's (1980) results that showed the incorporation of expert testimony resulted in a lower conviction rate. The group that had the eyewitness testimony and was exposed to an expert witness showed a lowered conviction rate for defendants. A key finding in the Mass et al. study regarded the impact of witness and expert witness exposed to the different groups. When no eyewitness was provided, they created a group to compare the adjustment of the verdicts for groups that were given an eyewitness and groups that were also given an expert witness. Compared to the group that did not have an eyewitness, the group with the eyewitness raised its guilty verdict from 2.54 to 5.18, which gives credit to the notion of jurors being more likely to convict when there is an eyewitness ready to testify. The group that was exposed to an expert testimony showed a guilty verdict of 3.57 on a 7 point scale. This is important to the field because it provides caution to the fact that an eyewitness may not be telling the truth, but it also does not lower the skepticism as low as the control group that did not have an eyewitness. Maass et al.'s results refute the argument that incorporating an expert witness will make the jury become too skeptical to believe the eyewitness. If this notion were true in this experiment, then the group exposed to expert witness testimony would have had a lower score than the control group that did not have a witness or expert testimony. Based on the results of this experiment, the incorporation of expert

witness reduced skepticism in the credibility of the eyewitness, but not enough to completely discredit the eyewitness.

Fox and Walters (1986) had groups that were exposed to two types of expert witnesses. One group was exposed to general findings on memory and the other was given an in-depth report on how certain factors affect eyewitness recall (Fox & Walters, 1986). They also exposed the groups to an eyewitness who was perceived as confident or an eyewitness who did not demonstrate confidence. Their results showed that a skepticism effect took place among the jurors after being exposed to eyewitness testimony. The belief in the confident eyewitness testimony went from 70% to 40% and the belief in the eyewitness that did not demonstrate confidence dropped from 55% to 12% after being exposed to expert testimony. These results show that when a jury is exposed to an expert witness, they will develop some sense of skepticism effect. However, the results also show that a jury is still more likely to believe eyewitness testimony if the eyewitness displays a high amount of confidence.

Cutler, Penrod, and Dexter (1989) found that exposure to expert testimony is likely to enhance juror attention toward factors that affect memory, which is the overall goal of bringing science into the courtroom. The expert witness is to provide the jury with more information regarding eyewitness testimony than they knew before the expert took the stand. Leippe (1995) proposes that it was not surprising that the experiments conducted involving expert testimony caused the jury to develop some sort of skepticism regarding the eyewitness testimony. The experiments were geared so that the introduction of expert testimony into the groups was to have the jury be cautious toward certain factors, such as confidence, stress, or racial effect that could cause the eyewitness's testimony to be inaccurate. The experiments were designed as the same purpose of having an expert testify in court; to have the jurors pay closer attention to the

eyewitness testimony and to educate them on certain factors that can cause eyewitness testimony to yield inaccurate results. Critics of using expert testimony in court argue that the empirical results have showed the skepticism effect to be demonstrated by the jurors showing a decrease in guilty verdicts. However, Leippe argues that naturally the jurors are going to increase their amount of skepticism, but the empirical results showed that the incorporation of expert testimony did not completely remove the guilty rates. Critics of expert testimony claim that the jurors become so skeptical that there is significantly lower chance that the jury will convict anyone because they are so afraid that they are making the wrong decision. Leippe says that if this were true, then the empirical results would have demonstrated a disappearance of guilty verdicts by participants that were exposed to expert testimony. The results showed a decrease in guilty verdicts but did not show a disappearance in guilty verdicts.

Applying Interactive Learning to Expert Witness and Eyewitness Testimony

Chickering and Gamson (1987) argued that the process of learning is not simply listening to someone explain ideas, rather, learning is a combination of listening and also interacting through firsthand experience in problem solving. Chickering and Gamson encouraged active learning as a way to overcome the barrier of trying to learn through simply listening. One method of active learning is hands on participation in an activity. Hearn, Miller, and Nelson (2010) conducted a study that compared hands on learning to simply watching a demonstration. Participants were scored on being able to recall specific steps in the task process (Hearn et al., 2010). They found that participants who participated in the hands on activity scored higher on recall than participants who watched the demonstration.

Duckworth, Kreiner, Stark-Wroblewski, and Marish (2011) developed an interactive approach toward exposing jurors to expert testimony. They used the experimental methods from

the many previous empirical studies that sought to find a difference in the effect of expert testimony exposed to jurors compared to jurors who did not receive expert testimony before reaching a verdict (Duckworth et al., 2011). The experiment added a new condition for participants. There was an additional independent variable that had the participants experience an eyewitness activity. They referred to the new independent variable as an eyewitness identification experience. This condition involved interactive participation so that the participants would understand first-hand experience in eyewitness testimony.

Duckworth et al. (2011) used a 2x2 experimental design to compare the effect of exposing mock jurors to expert witness testimony and the effect of participating in an expert witness procedure. They had three groups of exposure effects and one control group (Duckworth et al., 2011). The first group was exposed to eyewitness testimony and participated in the eyewitness identification procedure. The second group was only exposed to expert testimony. The third group was participated in the eyewitness identification procedure but was not exposed to expert testimony. The fourth group was the control group, and therefore, did not participate in the eyewitness procedure and did not hear from an expert witness.

The results of Duckworth et al. (2011) followed the supporting empirical evidence of previous studies that showed expert testimony does provide lower guilty convictions by raising awareness (Leippe, 1995). However, Duckworth et al. showed that exposure to expert testimony only had a higher conviction rate than the control group. This result is interesting regarding the arguments of opponents of expert testimony who have claimed that exposure to empirical evidence regarding eyewitness testimony would significantly lower conviction rates. The group that did not experience expert testimony but participated in the eyewitness procedure demonstrated a lower conviction rate than the control and the group that only experienced expert

testimony. The group that had exposure to expert testimony and participated in the eyewitness procedure showed the lowest conviction rate of all the groups.

Duckworth et al. (2011) concluded that the students who participated in the eyewitness identification procedure had a lower conviction rate because of the hands on experience they received in dealing with having to become an eyewitness and trying to identify the culprit in their eyewitness exercise. Scemakula (2001) and Verma (2003) suggested that when a person is given actual hands-on experience in learning, he or she is able to grasp the difference between hearing about information compared to actually participating in the learning activity. Through the many empirical findings and experiments of the eyewitness process, the field of psychology has findings that can be of direct assistance concerning memory recall for other disciplines (Leippe, 1995). Leippe (1995) even goes as far as placing an educational responsibility on the field of psychology to inform the public and legal system of its empirical findings that could be of benefit to society. Duckworth et al. is a prime example of applying learning and empirical findings to the criminal justice system. Through the incorporation of interactive learning, the participants in the Duckworth et al. study were able to better understand what it is like to be an eyewitness. The participants were able to see the difficulty in recalling an event.

Duckworth et al.'s (2011) eyewitness identification procedure may have gone beyond the desirable effect of expert testimony. Loftus (1980) called for the expert witness to be an aid in providing the jury with a better idea of what factors influence eyewitness testimony. Duckworth et al. gave participants a hands-on learning experience, which may have been the best way to inform the jury on how difficult an eyewitness recall procedure can be for a person. Duckworth et al.'s recent research involving an eyewitness identification procedure with expert testimony could be a breakthrough in allowing a jury to become exposed to findings regarding eyewitness

testimony and then participating in a hands-on experience. The jury would be receiving information and experience regarding eyewitness testimony, which would allow them to better relate to how an eyewitness may feel.

CHAPTER 3

METHODOLOGY

Participants

One-hundred fifteen undergraduate students from East Tennessee State University participated in this study. Four undergraduate criminal justice classes voluntarily participated in this study. The purpose of this study was to see if an effect would be present when applied to East Tennessee State University undergraduate students. If the results did show significant effect, then it could have been understood that the effect had been demonstrated under a specific demographic of undergraduate students. Future research could have been directed toward seeing if the results are constant when using different participants, such as respondents in the work force and varying ages.

Participants were notified that their participation in this study was completely on a voluntary basis and that no harm would come from this study. They were also notified that there were no penalties for choosing not to participate and that they could choose to leave at any point. The informed consent document was passed out, and the participants were notified that they could obtain the results of the study if they were interested. Participants were then told they would be serving as mock jurors that are hearing about a case of a woman accusing the defendant of being the man that pulled a knife on her and stole her purse. The woman's eyewitness testimony accusing the defendant was the only piece of evidence that the participants saw pertaining to the case. The groups were based on their exposure to the independent variables of expert testimony and eyewitness recall activity. Each class was designated as being the control group, expert witness testimony group, eyewitness recall activity group, and the combination group of expert witness testimony and eyewitness recall activity.

Design and Procedure

This design was based on Duckworth et al.'s (2011) study where four groups of participants were designated as the control group, exposure to the independent variable of expert testimony, participation in the independent variable of an eyewitness activity, or combination of the independent variables. The mock video of eyewitness testimony and mock video of expert witness testimony were based off of the Duckworth et al. design, but the original content from their study was not used. The independent variable of eyewitness activity participation was also based off of Duckworth et al.'s study, but the original activity content from their study was not used. In this study, the mock eyewitness testimony was recorded by the principal investigator. The eyewitness testimony was a female who identified the defendant as the person who stole her purse. The mock expert witness testimony was also recorded by the principal investigator. The eyewitness recall activity in this study was used from the Saunders's (2009) study on the weapon focus effect. The eyewitness recall activity was a five piece slideshow of a mock robbery (Saunders, 2009). A male approached a female in an alley, pulled a knife on her, and then stole her purse (Saunders, 2009). Participants watched the slideshow and then were asked to answer questions concerning the incident, such as the color of his shirt, knife, hair, and other identification questions to see how well the person was able to remember the incident. The eyewitness recall activity slideshow (Saunders, 2009) was the same crime that the eyewitness was testifying about. By having the eyewitness recall activity slideshow (Saunders, 2009) center around the same crime of a purse robbery, it was supposed to give participants a better idea as to what the eyewitness was testifying about. In other words, if the slideshow (Saunders, 2009) had not been of a man robbing a woman for her purse, and instead would have been an eyewitness recall activity relating to bird watching, it may have lessened their ability to relate to the

eyewitness testimony due to the magnitude of difference between the two types of scenarios. Providing a slideshow of the same type of scenario as the eyewitness testimony served as a way for the participants to gain a more personal understanding to the type of event the eyewitness was testifying.

This study was a 2x2 design made up of 115 participants. All four groups viewed the mock eyewitness testimony and then filled out a survey. The survey consisted of questions measuring the dependent variables. Participants were asked whether or not they found the defendant guilty or not guilty. The participants were also asked if their exposure to the independent variables of hearing expert witness testimony elaborate on the memory process and the trouble with eyewitness recall provided them with assistance in reaching their final decision of guilty or not guilty. They were given the choices of "not helpful", "somewhat helpful", and "very helpful". Participants were also asked if their exposure to the independent variable of participating in the eyewitness recall activity provided them with assistance in reaching their final decision of guilty or not guilty. They were given the choices of "not helpful", "somewhat helpful", and "very helpful". If participants were not exposed to the independent variable of expert testimony or participation in the eyewitness recall activity, they were asked to identify the same degree of helpfulness if they believed these procedures could have provided them with assistance in reaching their final decision of guilty or not guilty.

The first condition was the control group. It received no exposure to either independent variable of expert testimony or eyewitness recall activity. The first condition involved 24 participants who only watched a mock video of an eyewitness testimony and then filled out the survey. The second condition involved 30 participants who were exposed to the independent variable of hearing expert witness testimony. The group watched the mock interview of an

expert witness testify on what the field of psychology has found regarding the use of eyewitness testimony. After the mock expert witness testified, they watched the eyewitness testimony and then filled out the survey. The third condition involved 28 participants who were exposed to the independent variable of eyewitness recall activity that consisted of them watching a slide show of a mock purse robbery from the Saunders (2009) study. The participants were then given a questionnaire that asked about specific details in the slide show. After participating in the eyewitness testimony activity, the group watched the eyewitness testimony video and then filled out the survey. The fourth condition involved 33 participants who were exposed to the independent variable of expert testimony and the independent variable of eyewitness recall activity. After being exposed to both independent variables, the group watched the eyewitness testimony video and then filled out the survey.

The survey also contained seven demographic variables. The demographic variables were the participant's academic classification, gender, age, ethnicity, race, political affiliation, and religiousness. The reason for including these variables within the survey was for control purposes. If the exposure to hearing expert testimony showed to be statistically significant or if participation in the eyewitness recall activity showed to be statistically significant, then further analysis could have been done to see if any of these demographic variables had a significant relationship to the main effects. These demographic variables served to have the capability of allowing further analysis into why certain people voted guilty or not guilty. If there had been a statistically significant finding in groups that were exposed to the eyewitness recall activity, these variables would have allowed further analysis to see if a person's gender or age could have been the reason as to why statistical significance was shown among participants who were exposed to the eyewitness recall activity. If these demographic variables had not been included

on the survey, then analysis would have ended with simply knowing there was significance among participants in the group that were exposed to the independent variable of participating in the eyewitness recall activity. By having these variables included, it allowed the possibility to examine if certain demographics could have played a significant role behind the significance of participating in the eyewitness recall activity.

CHAPTER 4

RESULTS

Univariate Analysis

A univariate analysis was conducted in order to compare the demographic characteristics of the sample. As Table 1 indicates, frequencies of the demographic variables academic classification, sex, ethnicity, race, and age were used in order to see a reflection of the sample type. Although there were more participants that were of junior classification, participants' academic classification were relatively equal. The univariate analysis also showed the study sampled a relatively equal number of males and females. As shown in Table 1, the demographic variables of ethnicity, race, and age had little dispersion. The participants were predominantly of non-Hispanic or non-Latino origin. The frequency distribution of race revealed the majority of participants to be white. The study involved 101 white participants and 7 black or African American participants. The demographic variable of age had a greater amount of dispersion among participants, as can be seen in Table 1. The majority ages of participants were of the traditional age range of college undergraduate students. The mean age of participants was 21.99, which can be understood due to the numbers of juniors and seniors in the sample. Academic junior and senior college students are usually within the range of 21 to 22 years of age.

Table 1

Demographic Characteristics of Participants

<u>Variable</u>	<u>N</u>	<u>%</u>
Academic Classification		
Freshman	26	22.6
Sophomore	29	25.2

Table 1 (continued)

Junior	34	29.6
Senior	25	21.7
Sex		
Male	61	53
Female	53	46.1
Ethnicity		
Hispanic or Latino origin	7	6.1
Non-Hispanic or Non-Latino origin	105	91.3
Race		
Native American	1	.9
Black or African American	7	6.1
Pacific Islander	1	.9
White	101	87.8
Other	2	1.7
Age		
18	12	10.4
19	15	13.0
20	22	19.1
21	15	13.0
22	11	9.6
23	9	7.8
24	4	3.5

Table 1 (continued)

25	3	2.6
27	2	1.7
28	2	1.7
29	2	1.7
31	1	.9
32	2	1.7
34	1	.9
35	1	.9
39	1	.9
40	1	.9
missing	11	9.6
21.99 (mean)		

The survey also asked the participants to identify their political affiliation as being very liberal, liberal, moderate, conservative, or very conservative. As can be seen in Table 2, the participants' political affiliation was similar to a normal distribution. A political affiliation of moderate was the most common, followed by a relatively equal spread descending outward. The participants' degree of religiousness also served as a demographic variable in this study. The results of the participants' religiousness were similar to the normal distribution of the political affiliation characteristic. As shown in Table 2, the participants' degree of religiousness reflects a normal distribution. The majority of participants were somewhat religious, followed by an equal number of participants claiming to be either not religious or highly religious.

Table 2

Political Affiliation and Degree of Religiousness

Variable	N	%
Political Affiliation		
Very Liberal	4	3.5
Liberal	23	20
Moderate	51	44.3
Conservative	27	23.5
Very Conservative	6	5.2
Degree of Religiousness		
Not Religious	24	20.9
Somewhat Religious	65	56.5
Highly Religious	24	20.9

Binary Logistic Regression and Bivariate Analysis

The results were analyzed using logistic regression. Logistic regression would allow for control over each variable. By controlling each variable, it would be possible to see which independent variable had the strongest impact upon the dependent variable of voting guilty or not guilty and, therefore, would allow for prediction. However, according to Table 3, significant findings did not occur regarding the relationship of expert witness testimony or participating in the eyewitness recall activity. The demographic characteristics did not show any significance, as well. The only variable that did show significance was the helpfulness of expert witness testimony, and this is addressed later by cross tabulation and chi-square.

Table 3

Binary Logistic Regression on Final Decision

Variables in the Equation						
	B	S.E.	Wald	df	Sig.	Exp(B)
expert testimony	.222	.577	.148	1	.700	1.249
eyewitness activity	-.353	.631	.313	1	.576	.703
helpfulness of expert	1.013	.431	5.512	1	.019	2.753
helpfulness of activity	.376	.411	.836	1	.361	1.457
class	-.376	.372	1.018	1	.313	.687
sex	.055	.508	.012	1	.913	1.057
ethnicity	-20.55	17206	.000	1	.999	.000
race	.330	.450	.538	1	.463	1.391
age	.121	.119	1.037	1	.309	1.129
political	-.327	.307	1.137	1	.286	.721
religiousness	.145	.430	.114	1	.735	1.156
constant	36.101	34413	.000	1	.999	4.7x10 ¹⁵

Cross Tabulation Frequencies and Chi-Square Tests

Because of small sample size and lack of significance, another method of analyzation was used in order to find directional results and percentage comparison. In order to test the hypotheses of this study, bivariate analyses were conducted in order to find the empirical relationship of the designated independent and dependent variables. Cross tabulation frequencies were run to show percentage comparisons and to see if the results were in the hypothesized

direction of difference. Chi-square tests were run to see if there were statistically significant effects among the variables.

The first hypothesis stated that there would be a significant relationship regarding the final verdict of guilty or not guilty when the group exposed to the expert witness testimony was compared to the control group. The first hypothesis was not supported by the East Tennessee State University sample. As can be seen in Table 4, the cross tabulation frequency results were not significant. A chi-square test revealed that there was no significant relationship ($X^2(1) = .500, p > .05$). Because the results were not significant, the first hypothesis failed to reject the null, in that, the group that received expert witness testimony was statistically independent of the control group. Therefore, the first hypothesis was not confirmed. There was no existing relationship regarding the final verdict of guilty or not guilty when the group exposed to the expert witness testimony was compared to the control group.

Table 4

Cross Tabulation of the Control Group Compared to Expert Testimony

Final Verdict		Group		
		Control	Expert Testimony	Total
Guilty	Count	9	8	17
	% of total	18%	16%	34%
Not Guilty	Count	14	19	33
	% of total	28%	38%	66%
Total	Count	23	27	50
	% of total	46%	54%	100%

The second hypothesis tested the effect of the group's final verdict of guilty or not guilty based on participation in the eyewitness recall activity. The second hypothesis stated that there would be a significant relationship regarding the final verdict when the group that experienced the eyewitness recall activity was compared to the control group. The second hypothesis was not supported by the East Tennessee State University sample. Table 5 shows the cross tabulation frequency for the eyewitness recall activity group compared to the control group. A chi-square test revealed that there was no significant relationship ($X^2 (1) = 2.368, p > .05$). Because the results were not significant, the second hypothesis also failed to reject the null, in that, the group which participated in the eyewitness recall activity was statistically independent of the control group. Therefore, the second hypothesis was not confirmed. There was no existing relationship regarding the final verdict of guilty or not guilty when the group that participated in the eyewitness recall activity was compared to the control group.

Table 5

Cross Tabulation of the Control Group Compared to Eyewitness Recall Activity Group

Final Verdict		Group		
		Control	Eyewitness Activity	Total
Guilty	Count	9	8	14
	% of total	18.4%	10.2%	28.6%
Not Guilty	Count	14	21	35
	% of total	28.6%	42.9%	71.4%
Total	Count	23	26	49
	% of total	46.9%	53.1%	100%

The third hypothesis tested the effect of the group's final verdict of guilty or not guilty based on exposure of both the independent variables of hearing expert witness testimony and participating in the eyewitness recall activity. The third hypothesis stated that there would be a significant relationship regarding the final verdict when the group that experienced both the expert witness testimony and participated in the eyewitness recall activity was compared to the control group. The third hypothesis was not supported by the East Tennessee State University sample. The cross tabulation frequency is shown in Table 6, but they did not show to be significant when a chi-square test was conducted. A chi-square test revealed that there was no significant relationship ($X^2 (1) = .061, p > .05$). The third test also failed to reject the null, in that, the group which heard the expert witness testimony and participated in the eyewitness recall activity was statistically independent of the control group. The third hypothesis was not confirmed. There was no existing relationship regarding the final verdict of guilty or not guilty when the group that heard expert witness testimony and participated in the eyewitness recall activity was compared to the control group.

Table 6

Cross Tabulation of the Control Group Compared to the Combined Variable Group

Final Verdict		Group		
		Control	Both	Total
Guilty	Count	9	14	23
	% of total	16.1%	25%	41.1%
Not Guilty	Count	14	19	33
	% of total	25%	33.9%	58.9%
Total	Count	23	33	56

Table 6 (continued)

% of total	41.1%	58.9%	100%
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The group that heard expert witness testimony was asked how helpful it was in assisting them in reaching their final decision of guilty or not guilty. The control group was asked how helpful it would have been in reaching their final decision if they would have heard expert witness testimony. The fourth hypothesis tested the effect on the degree of helpfulness in hearing the expert witness testimony in deciding the final decision of guilty or not guilty compared to the control group. This hypothesis stated that there would be a significant relationship when the group that heard expert witness testimony was compared to the control group regarding the degree of helpfulness in hearing expert witness testimony would serve in helping reach the final decision of guilty or not guilty. The fourth hypothesis was not supported by the East Tennessee State University sample. The cross tabulation frequency in Table 7 shows that the group that heard expert testimony had a higher percentage rate for this independent variable as somewhat helpful than very helpful. The control group actually rated that hearing an expert witness testimony would have been very helpful in helping them reach their final decision of guilty or not guilty based off of the woman's eyewitness testimony against the defendant.

These results could have been due to the control group not actually experiencing the expert witness testimony. They may have believed it would have helped, but in reality, it may have only been somewhat helpful. This could be explained by the group that heard expert witness testimony. The group that heard expert witness testimony may have scored a higher percentage on the expert being somewhat helpful because the expert did not actually help them a significant amount regarding their final decision of guilty or not guilty. When statistically analyzed for significant relationship among the two groups, a chi-square test revealed that there

was no significant relationship ($X^2 (2) = 1.529, p > .05$). The fourth hypothesis also failed to reject the null, which means the fourth hypothesis was not confirmed. Therefore, the group that heard expert witness testimony had no significant difference from the control group when compared for the degree of helpfulness of the expert witness testimony aiding the participants in their final decisions of guilty or not guilty.

Table 7

Helpfulness of Expert Testimony in Control Group Compared to Expert Testimony Group

Degree of Helpfulness		Group		
		Control	Expert Testimony	Total
Not Helpful	Count	1	2	3
	% of total	1.9%	3.8%	5.7%
Somewhat Helpful	Count	9	15	24
	% of total	17%	28.3%	45.3%
Very Helpful	Count	14	12	26
	% of total	26.4%	22.6%	49.1%
Total	Count	24	29	53
	% of total	45.3%	54.7%	100%

The group that participated in the eyewitness recall activity was asked how helpful it was in their final decision, while the control group was asked how helpful they think it would have been in reaching their final decision if they had participated in an eyewitness recall activity. The fifth hypothesis also tested to see if statistical significance existed regarding the degree of helpfulness in participating in an eyewitness recall activity toward the final decision of guilty or not guilty. The fifth hypothesis stated that there would be a significant relationship when the

group that participated in the eyewitness recall activity was compared to the control group on the basis of how helpful this activity was or would have been regarding assistance to the final verdict. The fifth hypothesis was not supported by this sample. As seen in Table 8, a cross tabulation frequency showed that there did not seem to be profound differences between the two groups when asked about the helpfulness of participating in an eyewitness recall activity to provide assistance in the final decision of the woman's eyewitness testimony.

A chi-square tests was conducted to analyze the relationship of the two groups, and no statistical significance was found ($X^2 (2) = .261, p > .05$). Therefore, the fifth test failed to reject the null. The fifth hypothesis was not confirmed. There was no significant relationship between the group that participated in the eyewitness recall activity when compared to the control group on the basis of rating the degree of helpfulness that participation did or would have contributed to making the decision of guilty or not guilty.

Table 8

Helpfulness of Eyewitness Activity in Control Group Compared to Eyewitness Activity Group

Degree of Helpfulness		Group		
		Control	Eyewitness Activity	Total
Not Helpful	Count	4	6	10
	% of total	7.7%	11.5%	19.2%
Somewhat Helpful	Count	11	13	24
	% of total	21.2%	25%	46.2%
Very Helpful	Count	9	9	18
	% of total	17.3%	17.3%	34.6%
Total	Count	24	28	52

Table 8 (continued)

% of total	46.2%	53.8%	100%
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Although the fourth hypothesis about a possible effect of helpfulness in reaching the final verdict of guilty or not guilty when the group exposed to expert witness testimony compared to the control group was insignificant ($p > .05$), there was a group comparison that showed a significant difference in the degree of helpfulness regarding expert witness testimony. Cross tabulation frequency, as seen in Table 9, showed the comparison of these two groups. When the group that only participated in the eyewitness recall activity compared to the group that heard the expert witness testimony and participated in the eyewitness recall activity was tested for significance based upon their idea of degree of helpfulness in hearing an expert witness testimony during an eyewitness case, a chi-square test revealed that these two groups showed a statistically significant relationship ($X^2 (1) = 4.04, p = .036$).

As shown in Table 9, the comparison of the eyewitness recall activity group was compared to the group that heard expert witness testimony and participated in the eyewitness recall activity based upon the degree of helpfulness in hearing expert witness testimony revealed significant relationship and one of moderate strength. The Phi value revealed a moderate strength of inverse relationship, $\Phi = -.294$. Phi was chosen as the method of interpreting the symmetric values of the relationship because the variable degree of helpfulness in expert testimony had to be transformed into a two-level response instead of three (not helpful, somewhat helpful, or very helpful) due to the count in the first level being less than five.

Table 9

Helpfulness of Expert Witness Testimony in Eyewitness Activity Group Compared to Both

Degree of Helpfulness		Group		
		Eyewitness Activity	Both	Total
Somewhat Helpful	Count	9	16	25
	% of total	17.6%	31.4%	49%
Very Helpful	Count	17	9	26
	% of total	33.3%	17.6%	51%
Total	Count	26	25	51
	% of total	51%	49%	100%

Chi-Square test

	Value	df	Asymp. Sig (two-sided)
Pearson Chi-Square	4.404	1	.036

Symmetric Measures

	Value	Approx. Sig
Phi	-.294	.036

CHAPTER 5

DISCUSSION

Comparison of Results to the Duckworth et al. (2011) study

The purpose of this study was to investigate whether or not an effect would be shown when East Tennessee State University students served as mock jurors in an eyewitness testimony case that was presented with the independent variables of hearing an expert witness discuss what psychology has found regarding eyewitness testimony, the independent variable of participating in an eyewitness recall activity, or both. This design was based on Duckworth et al.'s (2011) study, where participants that took part in the eyewitness procedure showed a main effect for the likelihood of guilt. Duckworth et al. conducted a chi-square test of independence which revealed participants in the eyewitness procedure were more likely to give a verdict of not guilty.

However, the Duckworth et al. study did not find an effect regarding participants that heard expert witness testimony. This study did not find an effect for participants who experienced the eyewitness recall activity, nor did it find an effect for participants who were exposed to expert witness testimony.

Overall, this study did not show any statistically significant findings regarding the hypotheses. This study also showed findings different from the Duckworth et al. (2011) results. The contrasting findings of Duckworth et al.'s study compared to this study's findings at East Tennessee State University could be due to different demographic characteristics of the students who participated. The limitations of this study could also have served as a reason why this study showed findings different from the comparison study. The difference in mock presentation of the eyewitness testimony, the expert witness testimony, and the eyewitness activity could also be

why participants in this study did not demonstrate significant effects as participants did in the Duckworth et al. study.

As the demographic findings in Table 1 demonstrated, the East Tennessee State University undergraduate students in this sample had a similar sampling size of freshmen, sophomores, juniors, and seniors and almost an equal number of males and females. The Duckworth et al. (2011) study involved more freshmen and sophomore participants than upperclassmen. This study had more upperclassmen participants. The difference in academic classification makeup could have been a factor in the decision-making process. However, there were no significant differences when each academic classification was statistically compared. Future research could be done to see if the decision-making process of freshmen compared to juniors or seniors is different. According to the sex demographic variable in Table 1, the percentage of male to female is relatively equal in this study. The Duckworth et al. study showed male to female ratio to be relatively equal as well. The race demographic variable in the Duckworth et al. findings and this study of East Tennessee State University students showed similar proportion regarding race, with white being the dominant category. The age demographic variable of both studies was very similar. The Duckworth et al. study had a mean age of 22.59, while this study showed a mean age of participants to be 21.99 years of age.

Limitation of Sample Size

The limitation of sample size could be a major factor in this study not revealing significant findings. It is a stretch to say that a sample size of below 50 participants would produce significant findings. A larger sample size would possibly help produce significant findings. A larger sample size would help the study sample become closer to an actual reflection of the population parameters. The sample in this study could also not be an accurate

reflection of the population parameters at East Tennessee State University. Only four classes were sampled, and all of them were criminal justice classes. This study did not take into account any of the other majors across the university. It could also be argued that only four classes of the entire criminal justice major are not an accurate reflection of the entire major due to the abundance of classes that are offered in criminal justice.

An attempt to address the sample size limitation would be to gain a larger number of participants and a broader sampling of classes across the university. Because statistical significance was not found within these classes, it would serve as a greater benefit to broaden the sample to classes across the university. Sampling only classes within the criminal justice courses was an attempt to find significance in this specific parameter so that it could serve as a comparison for future research. The findings in the criminal justice courses could have been used to compare findings in chemistry courses, business courses, or music courses.

Limitation of Different Independent Variables

Another reason that this study did not show significant findings compared to the Duckworth et al. (2011) study could have quite possibly been related to the fact that although the design of this study was based on the Duckworth et al. design, the variables were not the same content. The variables did differ in ways that could have served to be the explanation for why this study did not show statistical significance. This principle investigator of this study shortened the time of delivery for the mock trial. Duckworth et al. had a much longer length of mock trial video. Only one attorney was used to question the defendant, as compared to Duckworth et al.'s study, which used two attorneys to question the eyewitness.

The eyewitness testimony was not the original content from the Duckworth et al. (2011) study. The eyewitness testimony was filmed by the principle investigator. This difference could

have affected decisions of guilty or not guilty. The expert witness testimony was also filmed by the principle investigator, and was therefore different from the original content used by the Duckworth et al. study. The eyewitness activity was also different in this study. The combination of not having the original content of both independent variables of the Duckworth et al. study could have been a confounding factor in why this study showed no significant results.

Limitation of Effort by Participants

Another reason as to why this study failed to show statistical significance or prove any of the hypotheses could have been due to the personal state of the participants. Some participants wrote on the survey that they had trouble hearing or understanding the expert witness testimony. Because these participants were unable to hear or understand the expert witness, it more than likely affected their ability to understand all of the information concerning memory and eyewitness testimony. One participant who was supposed to participate in the eyewitness recall activity failed to watch the slideshow. Because this participant failed to watch the slideshow, there is no way that this participant could have appropriately been exposed to this independent variable. Relating the activity to a personal level was the purpose of the independent variable because it would enable the participant to personally understand that eyewitness recall is not always an accurate mechanism. This participant's data was thrown out, but there could have been more participants who did not pay attention to directions.

Participants may have paid attention to directions but did not care to actively participate or give the desired amount of effort that the principal investigator wanted. If the participants did not give adequate effort in playing the roles of a mock jurors, then the effect upon the dependent variable of voting guilty or not guilty due to the exposure from the independent variables of expert witness testimony and eyewitness recall activity could have been significantly damaged.

The effect of the independent variables upon the dependent variables would be in this state of "damaged" if the participants failed to pay attention, failed to follow directions, did not care, or were confused in the overall process. Any of these mishaps could have been a reason that contributed to the hypotheses not being confirmed.

Future Research Implications

In regards to future research conducted on the effect of expert testimony or other methods of hoping to find a way to cause an effect on judging eyewitness testimony, this study provided information to be aware of by the next investigator. This study was based on and compared to the Duckworth et al. (2011) study, but it did not show the same results. Moreover, sample size was a large factor that contributed to results that were statistically insignificant. Future research on this study should attain a larger sample. Although none of the hypotheses were confirmed, other researchers could take the many elements of this study and gain a more accurate reflection of the total population mean regarding a juror's perception of eyewitness testimony and methods that could accurately assist them in deciding the guilt of a person accused by eyewitness testimony.

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APPENDIX

Survey

group 1

Please Circle your academic classification, gender, ethnicity, race, and identify your age.

Academic Classification: Freshman Sophomore Junior Senior

Gender: Male Female Other

Ethnicity: Hispanic or Latino origin Not Hispanic or Latino origin

Race: Asian Native American Black or African American Pacific Islander White Middle Eastern Other

Age:

Please circle which answer best describes your view:

1. How would you identify your political affiliation?

Very Liberal Liberal Moderate Conservative Very Conservative

2. How would you describe your degree of religiousness?

Not Religious Moderately Religious Highly Religious

Please answer each of the following questions:

Based upon the eyewitness testimony, do you find the defendant guilty or not guilty?

survey (continued)

Do you think having someone explain in further detail what psychologists have found concerning eyewitness memory would have been helpful in making a decision? Circle and explain.

Not helpful somewhat helpful very helpful

Do you think participating in an interactive learning activity based upon eyewitness recall would have been helpful in making a decision? Circle and explain.

Not helpful somewhat helpful very helpful

VITA
FORD C. MCCURRY

Personal Data:

Date of Birth: August 6, 1988

Place of Birth: Oak Ridge, TN

Marital Status: Single

Education:

Morristown-Hamblen High School West, May 2007

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Southeast Psychology Undergraduate Research Conference

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Tuition Scholar

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Honors and Awards:

Psi-Chi International Honors Society, spring 2011

Outstanding Graduate Student Award

Criminal Justice & Criminology, ETSU, Spring 2013