

Running head: EVALUATING EYEWITNESS ACCOUNTS

Evaluating Eyewitness Accounts:

The Practicality of Using Expert Testimony to Make Juries More Informed

Tom Manion

American University Honors Capstone

May 2008 - General University Honors

Advisor: Dr. Clara Cheng

Abstract

An abundance of psychological phenomena have an influence on eyewitness testimony. Cognitive factors such as reaction time, stimulus frequency and age differences in cognitive capacity interact with social phenomena such as the own race-bias, stereotyping and hindsight bias to manipulate and distort people's memories of events. Some legal and psychological professionals advocate the use of expert testimony on eyewitness phenomena in a trial so that judges and juries may be more critical of such accounts. However, it is unclear whether or not this practice would have any significant effects on the outcomes of trials.

Evaluating Eyewitness Accounts:

The Practicality of Using Expert Testimony to Make Juries More Informed

Late one evening in the summer of 1985, Chicago native Virdeen Willis, Jr. was fatally shot in the neck while leaving a bar with two friends. He was an officer at an Illinois state prison. After four days of investigation, police arrested Steven Smith, a convicted killer who had recently been released from the same facility where Willis had worked. With the help of local woman Debrah Caraway, state prosecutors were able to convict Smith of first-degree murder. Caraway testified that she had seen Smith at the bar earlier in the night, and when Willis left the bar, she saw Smith shoot him. Smith was eventually sentenced to death, and Chicago's South Side slept easier knowing that a murderer was behind bars (Chapman, 2002).

While the above incident seems like another job well-done for the American justice system, several key details are absent. Ms. Caraway had been using cocaine on the day of the murder, she was across the street when the actual shooting occurred, her boyfriend at the time was considered one of the suspects before Smith was arrested, the murder weapon was never found, the two women who were with Willis when he was shot could not identify Smith as the shooter, and accounts from other witnesses stated that Smith was still in the bar when Willis was killed. Yet, the jury in this case found Caraway's testimony sufficient to convict Smith and sentence him to death. In 1999, after spending more than 10 years on death row, the Illinois Supreme Court overturned Smith's conviction, forbid a retrial, and ordered his immediate release. Unfortunately, Smith is only one of many people in the United States who have been wrongfully convicted of a crime due to faulty testimony from an eyewitness. When DNA exonerations were first introduced in 1989, it was found that false eyewitness testimony played a role in 62 of the first 89 exonerated convictions (Chapman, 2002).

Prior to recent technological developments in the field of forensics, a great deal of criminal investigations, like the one described above, relied almost exclusively on eyewitness testimony. However, this has changed in recent years. That is not to say, of course, that eyewitness testimony is no longer important. In fact, the majority of criminal investigations today center around corroborating or disproving eyewitness accounts of events. When assessing the validity and accuracy of an eyewitness, one must take into account various psychological phenomena. Without being aware of these factors, judges and juries could inadvertently send an innocent person to prison or acquit a guilty person because of seemingly valid testimony that actually turns out to be false. The last few decades have seen a surge in research on eyewitness testimony in the fields of cognitive and social psychology that has shed light on the numerous and various factors that may affect an eyewitness account of an event. These discoveries have led to policy and protocol recommendations that are enabling legal professionals and the general public alike to make better-informed decisions regarding such testimony.

This paper will analyze the various psychological phenomena that can influence eyewitness accounts. Research studies conducted on both cognitive and social factors such as reaction time, assessments of cognitive effort, age differences in cognitive development and functioning, stereotyping, and confirmation bias are discussed. This is followed by an evaluation of exactly how observers assess the accuracy of eyewitnesses. This is important because, given the number of false convictions that occur due to faulty testimony, there is clearly a disconnect between what makes testimony seem accurate to an observer and what actually makes the testimony accurate in reality. Following this analysis are several recommendations for combating this apparent discrepancy. One particularly controversial recommendation is the use of expert testimony in a trial to inform judges and juries about the psychological factors that

affect eyewitness accounts. The paper concludes with a proposal for a research study that would extend the current research on the use of such expert testimony.

Cognitive Factors

Age Differences

Age differences in various eyewitness phenomena are incredibly important to analyze. When there are multiple witnesses to an event such as a vehicle accident or a robbery, the investigators as well as the attorneys involved in the subsequent court proceedings may want to take the ages of their witnesses into account before questioning them or putting them on the stand to testify. Poole and White (1991) analyzed eyewitness age differences at length in a study of 133 participants ranging in age from 4 to 66. The participants were broken down into four separate age groups: 4-5 year olds ($n = 25$), 6-7 year olds ($n = 31$), 8-9 year olds ($n = 30$), and adults from 18 – 66 ($n = 47$). All participants individually witnessed an ambiguous event. Half of the participants were questioned only once, one week after the event. The other half were questioned twice: once immediately after the event and then again one week later. The questions asked were a combination of both open-ended and yes-or-no types. Results indicated no significant differences in recall performance between adults and children in the open-ended response questions; however 4-5 year old participants who were questioned twice were statistically more likely to alter their responses to yes-or-no questions than the other three groups. Also, on questions for which the participants did not have adequate information to give an appropriate answer, adults were more likely to speculate a potential answer rather than just respond that they did not know. Interestingly, the adult participants also became more certain of these speculations the more they were repeated.

Poole and White (1993) followed up with these participants two years later. Most

eyewitness research done to date does not take into account the long spans of time usually present between witnessing an event and the actual testimony given in a trial. Thus, Poole and White's procedure is important because it accurately reflects the conditions under which eyewitnesses are questioned in criminal trials. In the follow-up portion of this study, participants were again asked both open-ended and yes-or-no questions about the event they had witnessed two years previously, and some significant effects were found in the younger participant groups that were not found in the adult group. Specifically, children were overall less consistent than adults on yes-or-no questions, less accurate on open-ended questions, and more likely to fabricate answers. Poole and White concluded that additional research needs to be done on the qualitative and quantitative changes in children's testimony over long delays.

Cohen and Faulkner (1989) took this research one step further by studying the age differences in memory recall when presented with misleading information. The 64 participants were divided into a young group (ages 25 – 45) and an elderly group (ages 62 - 82). This contrasts Poole and White's (1993) research because instead of analyzing the differences between adults and children, Cohen and Faulkner (1989) were interested in differences between young adults and older adults. All participants watched a video of a young boy being abducted that lasted approximately three minutes. Afterward, participants were given a written version of the story depicted in the video that they were told to read over once at their own pace. However, half of the participants received a written version that altered two critical incidents in the story while the other half received a written version that was fully accurate. All participants then responded to 18 multiple choice questions about the events depicted in the video, two of which involved the events that were altered in the misleading written version of the story. The results of this study showed that the elderly participants were significantly more likely to be misled by

the false written information than were the younger participants. Furthermore, the elderly participants were also more confident than the younger participants that their erroneous responses were accurate.

This research was replicated by Roediger and Geraci (2007), who extended prior research by introducing variability in the frequency of misinformation given to the participants. Their study divided participants into a younger group with a mean age of 20, and an older group with a mean age of 75. Each group watched two slide shows, each of which depicted a certain event. They were then given three written accounts of what happened in the slides, which they were told were written by witnesses who had seen the slides previously. Several key details were manipulated in the written version of the events to either be neutral or incorrect. That is, if the slides showed a Maxwell House coffee man, the neutral accounts would simply refer to him as a coffee man and the incorrect accounts would refer to him as a Folgers coffee man. Participants were randomly selected to receive incorrect information in zero, one, or all three of their written accounts. Afterward, all participants took memory tests about the events that occurred in the slides. The results of the study indicated that the older subjects were significantly more likely to make misinformation errors than the younger subjects.

The results of these studies on age differences in eyewitness memory imply that one should be cautious in assessing the accuracy of eyewitness testimony particularly when the witness is a young child or an elderly person. Since memory is primarily a cognitive function, it is possible that younger children have not yet developed an optimal level of cognitive ability to serve as accurate witnesses to an event. Furthermore, elderly individuals may have experienced a decline in their cognitive resources or a slowing of their cognitive efforts that could be affecting their ability to testify about an event accurately.

Reaction Time and Cognitive Effort

Cognitive functioning is an essential factor in studying eyewitness testimony, as a lot of the phenomena relating to it deal with memory and other higher processes of the brain. A study by Robinson, Johnson and Herndon (1997) assessed the relationships between several cognitive factors of eyewitness testimony including reaction time and assessments of cognitive effort. In this study, 111 college undergraduates viewed a three-minute video of someone stealing a woman's purse. After watching the video, participants performed a distracter task for several minutes to simulate the time and experiences that interfere with recall between witnessing an event and testifying about it. Participants were then asked 32 questions about specific details of the video they had just watched. One half of the participants were in the recognition condition and were given the questions in a multiple choice format, while the other half of the participants, whose questions were open-ended, were in the recall condition. Following each question, participants were also asked to rate their confidence in the answer they gave, whether their answer was effortful or automatic, and whether they drew upon a visual image or mentally reconstructed their answer.

The data collected from this study illustrate that while participants in the recognition condition were more accurate overall, participants in the recall condition were more aware of whether they were giving an accurate or an inaccurate response. Reaction time also played a larger role for participants in the recall condition. The amount of time between a question being asked and a response being given was significantly longer for inaccurate responses than for accurate ones. This supports the commonly held notion that hesitation is a sign of either fabrication or a lack of information. It was also found that when participants reported that their responses were automatic and visual, they were significantly more accurate than those whose

responses were effortful and reconstructive.

This study has several implications for eyewitness testimony. First of all, the researchers note that these results imply that some specific conditions, such as yes-or-no recognition scenarios, where investigators should be incredibly cautious in using confidence to infer accuracy. Contrary to the common sense notion, confidence and accuracy are not always positively correlated. Second, it is important to distinguish between legal scenarios where individuals use recall memory and where they use recognition memory. Generally, recognition memory would be used only in a line-up identification of a criminal by an eyewitness or victim because this is the only time during a legal investigation that is comparable to eyewitnesses having a multiple choice option. Everything else – statements to police and trial testimony for example – would fall under the category of recall memory. According to Robinson et al.'s (1997) research, one should logically be able to infer that while testimony on the witness stand may not be as accurate as identification from a line-up, those witnesses who give testimony during a trial have a greater insight into the accuracy of their accounts. However, it has been illustrated countless times, through DNA exoneration for example, that eyewitness testimony is far from completely reliable. This could lead one to question why, if trial witnesses seem to have more insight into the accuracy – or inaccuracy – of their testimony, so many would still be giving inaccurate accounts. It seems that either Robinson et al.'s data analysis was somehow flawed or people are, for whatever reason, giving inaccurate testimony in full knowledge of the fact that they are doing so. If it is the latter of the two, even more questions are raised as to the extent of the deception, the reason for it, and how often it occurs. Drawing support from Poole and White (2001), it is also possible that individuals have good insight into their own inaccuracy at first, but after repeating their answers several times they effectively convince

themselves that their answers are correct. Either way, further research needs to be done to explore this discrepancy.

Memory Content vs. Memory Retrieval

Robinson, Johnson and Robertson (2000) extended the previous findings by comparing the content of a memory with the process by which it is retrieved to see which one had more of an impact on various aspects of eyewitness testimony discussed in the previous study, including accuracy, confidence, and reaction time. The methods were nearly identical to that of Robinson et al. (1997) with the exception of two new conditions: reaction time salience and feedback. To manipulate reaction time salience, participants either answered each question and then rated their confidence for each item (low salience) or they answered each question, were told to estimate their reaction time to the nearest hundredth of a second, and then rated their confidence (high salience). To manipulate feedback, participants were asked to estimate their reaction time after answering each question. Following this, the participants were told what their actual reaction time was, with the exception that some of them were told their reaction time accurately, and others were told their reaction time inaccurately.

Robinson et al. (2000) failed to reject the null hypothesis in each of the measures in this study. Neither reaction time salience nor reaction time feedback had a significant association with confidence, accuracy, or the confidence—accuracy correlation. However, these results can tell researchers a great deal about what factors can affect eyewitness testimony. Since no significant main effects were found for reaction time salience or reaction time feedback, Robinson et al. conclude that there is no evidence of a process-related account of memory monitoring. However, building off of their previous research, they concluded that the subjective vividness of an event, a cue related to memory *content* was a significant predictor of confidence

and accuracy. One can infer from these conclusions that the content of a memory rather than the process by which it is retrieved will have more of an impact on the confidence, accuracy and speed of its recall. It would be important to research exactly what aspects of memory content have the greatest effects on recall. Robinson et al. noted subjective vividness as an important predictor, but it is important to know what other factors make a difference.

Stimulus Frequency and Prior Familiarity

Eyewitness research also focuses on the frequency of the stimulus presented as well as the observer's prior familiarity with the stimulus. This is an incredibly important factor in memory recall because it pertains not only to the exposure of the witness to the event taking place, but the exposure of the witness to everything else that was occurring at the same time as the event. According to Maddox and Estes (1997), prior familiarity with certain stimuli can affect eyewitness recollection of the event. For example, special attention needs to be given to the allocation of cognitive resources to various other stimuli present at the scene of the event. If a witness just happens to be in the same vicinity where a robbery is being committed, but his/her attention is allocated more on the other stimuli in the surrounding environment, their recollection of the event will be somewhat hindered. Furthermore, the relative familiarity the witness has with the event and other stimuli in the surrounding area is also important. Familiarity with certain stimuli can lead to more accurate memory recall; however, it can also lead to observers using prior experience with the stimuli and biases they have developed to make inaccurate assumptions about what exactly occurred. Familiarity is also important with respect to line-up identifications. Maddox and Estes (1997) affirm that special attention needs to be given to the familiarity with people or objects either present at the scene or used as lures in line-ups and recognition tests because familiarities with certain types of people, for example, could influence

identifications made during a line-up. Further research needs to be done to explore the exact affects of these familiarities as well as the best policy to deal with any issues that may arise because of certain familiarities or biases in eyewitnesses.

The Weapon Focus Effect

Recent research indicates that the weapon focus effect also plays a role in eyewitness memory. This phenomenon occurs when a witness' attention is diverted to the weapon that an individual is holding rather than other aspects of the event. Pickel (1999) examined the weapon focus effect in a study of 129 college undergraduates. Participants were divided into four groups that each watched a two-minute video where a woman was observing a sports activity and later came in contact with a man who was carrying a gun. She gives the man some money and then he walks away. The context of the event and the threat level of the gun were manipulated in the videos. Specifically, half of the participants saw a video in which the event takes place at a baseball game while the other half saw a video of the event taking place at a shooting range. Within each context, one version of the video showed the man pointing the gun at the woman who backs away in fear, while the other version depicted the man holding the gun at his side with the barrel pointed at the ground and the woman smiling at him. After viewing the video, participants filled out questionnaires about the events they had just witnessed and were asked to look at photographs of five different people and identify which one, if any, was the man in the video. The results of the study showed that participants who saw a version of the video depicting the baseball field context were less accurate in their memories of the man than those who saw one of the videos at the shooting range. No differences were found between participants who viewed the high threat situation and the low threat situation.

The theory behind these results is that one is not surprised to see a person carrying a gun

at a shooting range; however, a person carrying a gun at a baseball game is unexpected. Participants who viewed the videos that took place at the baseball game performed worse on memory questions about the man because the fact that he was carrying a gun was unexpected and therefore distracting. More of their cognitive abilities were allocated to presence of the gun than the details of the man carrying it. This implies that the weapon focus effect occurs because, in general, most weapons are unexpected in the contexts in which they appear. One could conclude from this that eyewitnesses to events in which a weapon is used may not be as accurate in their testimony. Interestingly, Pickel (1999) did not find any significant differences with regard to identification from a line-up. This may be because, while the participants in the baseball game group remembered fewer details about the man in the video, they were still able to remember enough to be able to recognize and identify him in a lineup. It is also a possibility that all of the participants processed the same information and the presence of the gun in an unexpected context interfered with the retrieval of those details. More research should be done to assess the differences in the effects of the weapon focus phenomenon between detail recall and line-up identification.

Social Factors

Stereotyping

Eyewitness accounts are also susceptible to an array of social phenomena. One example is stereotyping and its effects on human memory, which was studied by Araya, Ekehammar and Akrami in 2003. In this study, half of the participants were primed with immigrant stereotypes by being instructed to write down the three largest immigrant groups in their country and their thoughts about them. The other half of the participants served as a control group by performing the same task, but instead of thinking of three immigrant groups, they were instructed to write

down and describe three nearby cities. All participants were then given a list of twelve words, including words associated with immigrant stereotypes. After looking over the list, half of the participants were told to forget the list, and half were told to remember them to the best of their ability. Finally, a memory test was given to all participants, regardless of priming condition or whether they were told to remember the words or forget the words. The test consisted of a list of twenty-four words – the original twelve plus an additional twelve which also included words associated with immigrant stereotypes – in which the participants had to identify the words present in the original list.

Results showed that participants in the immigrant priming condition not only falsely recognized more stereotypical words than those in the neutral priming condition, but also falsely recognized more stereotypical words when they were told to forget the original list than when they were told to remember it. These findings indicate that stereotypes can aid in creating false memories, which has profound implications on eyewitness testimony where the event in question involves a minority or another individual who is a potential victim of stereotyping. Inaccurate testimony about these individuals could lead to false convictions, especially when the alleged perpetrator is a person often associated with stereotypes, such as immigrants, homosexuals and racial minorities. The most interesting aspect of these findings is the fact that participants falsely recognized more stereotypical words when they were told to forget the original list. This illustrates that reading a stereotypical word cues not only the meaning of that particular word, but the views it represents. So while participants may have actually forgotten the actual word from the original list as instructed, the ideas associated with the word managed to persevere in their memories.

Additionally, it is important to note that the above results were found for words

associated with immigrant stereotypes but not for non-stereotypical words. That is, participants in the immigrant priming condition, on average, falsely identified the same number of non-stereotypical words as those participants in the neutral priming condition. This raises the question of what makes stereotypes unique in that, when primed, they can facilitate the creation of false memories while neutral priming does not. Further research should be done to explore this apparent power of stereotypes, such as what accounts for it and what other factors share this power over human memory.

This is also related to the confirmation bias. The confirmation bias refers to instances where an individual expects an event to occur, so they will therefore interpret events in a certain way or search for evidence that their assumption is correct. For example, if an individual has a negative opinion about a particular immigrant group and therefore expects them to be rude, this individual will look for evidence that confirms the expectation while ignoring information that is inconsistent with his/her prior expectations. The confirmation bias can be dangerous in eyewitness scenarios especially where prejudice is involved. If an individual has prejudices against a certain group of people, they may be more likely to describe an unknown assailant as being a part of that group, or more likely to point an accusatory finger at someone belonging to that group. Even if they have no logical reasons for doing so, they will interpret events and memories to make it seem logical to them.

The Own-Race Bias

The own-race bias refers to the notion that witnesses to an event remember more accurate details when the subject of the event is of the same race as the witness. Race is a particularly sensitive subject because of how many different races and ethnicities are represented in this country. Many people would claim that the own-race bias is a form of racism, but this is not the

case. It is merely the result of what types of people a person is exposed to and familiar with while growing up. A person of a particular race, who grew up interacting primarily with people who are of that same race, will be more likely to pay attention to physical features that vary among that race. Individuals will pay more attention to these features because it generally allows them to quickly distinguish one person from another. Through this, people generally become better able to distinguish the physical features of people of their own race than people of a different race. Cross-race false identifications, therefore, are not so much racist as they are a result of limited familiarity with individuals of other races.

Is there empirical support for the own-race bias? Smith, Stinson and Prosser (2004) showed participants a video of a robbery where the perpetrator was either White or Black. Following the video, participants were given two simultaneous six-person lineups – half of which contained the actual perpetrator and half of which did not – and were told to respond to whether the perpetrator was present in the lineup, and if so, which individual was the perpetrator, and how they arrived at their conclusion.

They found that the participants, all of whom were Caucasian, performed more accurately when the perpetrator was White rather than when the perpetrator was Black, indicating the presence of the own-race bias in eyewitness accounts. However, this effect was only found in participants who actually said that the perpetrator was present in the lineup and identified him; it was not found in participants who did not identify any of the people in the lineup as the perpetrator or stated that the perpetrator was not present in the lineup. These results indicate that cross-race effects could be related to eyewitness confidence. Perhaps the more confident one is in his/her testimony, the more susceptible he/she is to the own-race bias. Or conversely, maybe the own-race bias causes an individual to become more confident in their testimony regardless of

accuracy. Further research would need to be conducted on this topic to identify whether or not a relationship between the two actually exists and, if so, the direction of that relationship.

Hindsight Bias

Hindsight bias refers to the notion that an event seems more obvious or predictable after the fact than it did at the actual time that the event occurred. In a series of studies conducted by Harley, Carlsen and Loftus in 2004, participants were shown blurred images of well-known celebrities one at a time that gradually became clearer. When the participant was able to identify the celebrity, he/she indicated this, and then typed the celebrity's name. After this initial task, participants were divided into three conditions. Participants in the first condition were shown each of the faces again and were asked to identify the amount of clarity at which they were able to identify the celebrity. Participants in the second condition performed the exact same task, except beforehand, they were informed about hindsight bias and the effects it has on people's memories and confidence. Participants in the final condition were shown all of the same faces again plus a few new ones one at a time and were asked to identify the clarity at which they thought an uninformed peer would be able to identify the celebrity in the photograph.

Participants in this study exhibited overconfidence in all three conditions. In the first two conditions, participants thought that they were able to identify a celebrity's face at a blurrier stage than they actually did, and in the third condition, participants indicated that an uninformed peer should be able to identify a celebrity's face at a lower level of clarity than they themselves could. These results have three major implications. First, they show that hindsight bias does play a role in eyewitness confidence, suggesting that eyewitnesses will often be overconfident in their testimony to some degree. Secondly, the results show the prevalence of the hindsight bias in eyewitness accounts regardless of whether or not an individual is informed about the

phenomenon and its effects. This in itself has significant implications regarding the effectiveness of expert testimony by a psychologist during a trial in which eyewitness accounts are part of the evidence. Finally, these results indicate that individuals are not only overconfident of their own perceptual abilities, but of the abilities of others as well. This can be applied to the role of jurors and their assessment of eyewitness testimony during a trial, proposing the possibility that jurors may overestimate the accuracy of witnesses and, because of this overestimation, render inaccurate verdicts.

How Observers Assess Eyewitness Accuracy

Harley et al.'s (2004) results show insight into another dimension of eyewitness research: how observers assess eyewitnesses. This is particularly relevant because in a trial setting, it is up to the jurors to critically analyze all of the testimony presented to them and then infer whether they think any of it is true or not. Past research conducted by Brigham & Bothwell (1983) illustrates that, in a courtroom setting, jurors are unable to differentiate between accurate and inaccurate eyewitness testimony (Kassin, Rigby & Castillo, 1991). In an effort to improve this, one must identify the methods by which observers assess the accuracy of an eyewitness. In one study, 38 Stanford University students watched a video of a mock-robbery. Following the video, participants were questioned about the event and presented with a series of photographs and asked whether the perpetrator was present and if so, to identify him. This process was videotaped and participants were shown their videos after the task was completed. They were then asked open-ended questions regarding what they noticed, thought about, or were surprised by when reviewing their own testimony. Thirty-one of the participants cited the manner in which they looked at the photographs – for example, how many times and in what order the photographs were looked at. Twenty-nine participants noted changes in facial expressions and

fourteen noted body movements. Other factors that were less common were words spoken, response time, and tone of voice.

From these results, one can infer that individuals tend to focus a great deal on behavioral cues when assessing accuracy. Kassin et al. (1991) also note that past research (e.g. Brigham and Wolfskiel, 1983; Deffenbacher and Loftus, 1982; Yarmey and Jones, 1983) supports the common sense notion that observers place a lot of emphasis on eyewitness confidence when assessing their accuracy. However, just because an eyewitness seems confident in his/her testimony does not mean that he/she is necessarily accurate. As previously mentioned, Poole and White (1991) showed that mere repetition of an argument or an alleged observation increases one's confidence in those arguments or observations. In addition, Robinson, Johnson and Herndon (1997) note that unusual pauses before answering questions indicates inaccuracy, even though the witness may appear to be extremely confident. Indeed, numerous studies have now established that eyewitness confidence is not a reliable predictor of accuracy (e.g., Bothwell, Deffenbacher, & Brigham, 1987; Wells & Murray, 1984).

Combating Faulty Observer Assessments of Eyewitnesses

Retrospective Self-Awareness

Since previous research indicates that individuals are using unreliable cues to assess the accuracy of eyewitnesses, it is important to generate ideas on how to best combat this. Kassin et al. (1991) suggested utilizing retrospective self-awareness, which refers to an individual performing a task and then watching themselves perform the task afterward, generally through a video. Kassin et al.'s (1991) participants performed the mock-robbery and perpetrator identification tasks described above. However, half of the participants were shown the video of their testimony and identification and then asked to rate their confidence (the retrospective self-

awareness condition). The other half of the participants were asked to rate their confidence without seeing a video of their own testimony. The results illustrated an increase in the accuracy-confidence correlation among those in the retrospective self-awareness condition who identified one of the photographs as the perpetrator, but not in those participants who reported that the suspect was not present in any of the photographs. From these results, one could logically hypothesize that since retrospective self-awareness seems to play a role in increasing the accuracy-confidence correlation, and observers focus a great deal on eyewitness confidence when assessing their testimony, then retrospective self-awareness could be used in a courtroom setting to improve the assessments of eyewitness accounts by jurors. However, a study done by Turtle (1989) tested this theory and did not yield any statistically significant results (Kassin et al., 1991). Furthermore, attempting to uniformly implement a retrospective self-awareness factor in criminal trials would not only be complicated, but also expensive. Thus, while one can conclude that retrospective self-awareness does influence eyewitness testimony, it is a phenomenon that is difficult to control and manipulate outside of a laboratory setting.

Altering Trial Procedures

Adjusting courtroom procedure is a potential course of action that has been explored by psychologists for many years. One of the earlier studies of eyewitness testimony performed by Lipton in 1977 tested several dependent variables to find out what factors were most associated with accuracy in order to promote further research on the topic. In this study, 80 participants were shown a short film that depicted a murder. The participants were then told that they had to testify about what they witnessed, and each participant was placed in one of several experimental conditions. It was found that the immediacy of the testimony, testimony structure and question bias all affected the participants' accounts of what happened. Immediacy of the testimony refers

to the amount of elapsed time between witnessing an event and giving an account of what occurred. Testimony structure refers to aspects of the testimony such as whether the questions asked were more open ended or yes-or-no types, whether the witness freely recalled the event or was guided by the attorney, and whether the witness was merely reporting facts or if they were discussing their opinion or interpretation of the facts as well. Question bias refers to attorneys using leading questions that can influence a witness' testimony. A popular example of this is the difference between "What happened when the car bumped/hit/smashed into the other car?" The choice between using the words "bumped," "hit," or "smashed into" could influence the testimonial response. If all of these procedural differences altered the given testimony in some way, one could assume that the accuracy of those accounts was also affected. The results reiterate the need to hold trials in a timely fashion because the more time that passes, the less reliable, on average, the eyewitness accounts become. Judges also need to make sure that attorneys are not trying to bias the jury or lead the witnesses to answer in a certain way by asking questions in a certain way.

Haber and Haber (1998) made recommendations for altering courtroom procedure, focusing strictly on cases that deal with the retrieval of memories of long-past events. There is a great deal of controversy over this phenomenon because people can lose their memories of certain events due to factors such as suppression, repression, or simply forgetting. An issue arises when a person claims that a memory that has been lost for many years has finally come to the surface and the newly surfaced memory has given them cause to take legal recourse against another individual. Haber and Haber (1998) recommend a set of five criteria for evaluating the admissibility of recovered memories of long past events. First, one must judge whether or not the memory is untainted. If it was tainted by post-event information, the testimony is rejected; if

it was untainted, the testimony is accepted; and if it is unclear, then the second criteria must be evaluated. The second criteria entails evaluating whether the loss and recovery of the memory is justified. It must be psychologically verified that the individual actually lost the memory and then recovered it later to ensure that the individual is not fabricating the loss and recovery of a memory merely for personal gain. The third criterion to be evaluated is whether the content of the memory is consistent with validated scientific evidence. If the recovered memory contradicts completely verified scientific evidence, then one can assume that the memory may have been exaggerated or otherwise altered. The fourth criterion involves whether there are any other independent witnesses to the event. If there are, the testimony is admitted, if there are not or the answer is unclear, the fifth item must be evaluated, which is whether there is corroborative forensic evidence that supports the memory. If there is, the testimony is admitted, if there is not or the answer is unclear, the testimony may be admitted, but Haber and Haber (1998) recommend that it be admitted under cautionary notes to the jury.

Altering courtroom procedure is a valid option in trying to improve juror assessments of accuracy in eyewitnesses. The effects of many of the psychological phenomena discussed above could be significantly lessened simply by changing certain aspects of the proceedings. However, this type of solution would be incredibly difficult to implement. Most changes to courtroom procedure occur on a district to district basis. So trying to apply these changes at the state level, let alone the national level, would be a long, complicated and expensive process.

Expert Testimony on Eyewitness Research

Another, more controversial alternative to explore in trying to improve juror assessment of eyewitnesses is allowing psychologists to provide expert testimony on factors and phenomena that affect eyewitness accounts in court proceedings where a significant portion of the evidence

is based on an eyewitness. Kassin, Hosch and Memon (2001) supported this practice based on a study in which they surveyed 64 psychologists who had experiences testifying in court as expert witnesses on a variety of issues. The participants were given a list of 30 eyewitness phenomena and asked to discuss the validity of presenting them in court based on the participants' personal experiences. By a rate of 80% or more, the psychologists identified more than 20 eyewitness phenomena that have been researched to the point that they are sufficiently reliable to present to a jury in order to assist them in assessing eyewitness testimony. These include the wording of questions, lineup instructions, post-event information, child witness suggestibility, attitudes and expectations, the cross-race bias, the weapon focus effect, the accuracy-confidence correlation, and exposure time. Yarmey (2001) also wrote in favor of allowing psychologists to serve as expert witnesses in assessing eyewitness testimony, arguing that such testimony allows judges and juries to be assisted in decision making so that wrongful convictions can be minimized and acquittal of guilty suspects can be maximized.

Conversely, McCloskey and Egeth (1983) argued against the use of expert eyewitness testimony, suggesting that expert testimony that is trying to make judges and juries more critical of eyewitness accounts may in fact be making them *too* critical, and that this could lead to the acquittal of defendants who are actually guilty. They also note that recent research along with current wrongful conviction rates indicate that while jurors are unable to perfectly discriminate between accurate and inaccurate eyewitnesses, there is little to no evidence to support the notion that expert testimony would improve juror discrimination. Lastly, they argue that expert eyewitness testimony is not needed because it is the opposing attorney's job to effectively cross-examine witnesses by pointing out inconsistencies in their testimony.

Berman and Cutler (1996) conducted a study to test McCloskey and Egeth's (1983) last

point. For this study, participants watched a video of a trial in which the primary evidence against the defendant was testimony from an eyewitness, and after the video was over, participants answered whether or not they would convict the defendant, as well as questions regarding the witness. One group of participants saw a video of completely consistent testimony, one group saw a video where the eyewitness gave information on the stand that was not present in the pretrial investigation, the third group saw a video where the witness gave statements in court that contradicted statements made during the pretrial investigation, and the last group saw a video where the witness gave two contradicting statements at different times while on the stand. The results showed that participants exposed to any form of inconsistency were significantly less likely to convict, found the defendant less culpable, and found the eyewitness less effective.

The question of whether or not allowing expert eyewitness testimony to be given at a trial is a worthwhile investment is difficult to answer. Certainly, if it does ensure that juries are more critical when evaluating an eyewitness, and this in turn enables them to make better-informed decisions regarding such testimony, then it is a good idea. However, there is a fine line between being critical and being overly skeptical that we must be careful not to cross. While it is important that eyewitness accounts are not merely taken for absolute truth at face value, it is also important that they are assessed fairly and not completely discredited.

Proposed Study

The following research proposal outlines an experiment that aims to further current eyewitness research by analyzing the effects of using expert testimony in a trial to inform judges and juries about the factors that can influence eyewitness testimony. Proponents of using expert testimony argue that it will make juries more critical of eyewitness accounts (Yarmey, 2001). However, some opponents of this procedure argue that expert testimony could make jurors too critical of eyewitnesses (McCloskey and Egeth, 1983). Other opponents say that expert testimony is simply not needed, as the adequate cross-examination should be enough to inform juries about an eyewitness account that may not be completely accurate (Berman and Cutler, 1996). The proposed experiment extends the most recent research on the effects of expert testimony by pitting against another powerful factor that has also been shown to affect how observers assess eyewitnesses: the degree of confidence the witness has in his/her testimony.

Method

Participants

Participants in this study will consist of 100 volunteers recruited from the Washington, DC area. Approximately half of the participants will be male and the other half will be female, and they will come from various races, ethnicities, occupations and backgrounds. Given the nature and purpose of the study, it is important that all participants be eligible to serve on a jury.

Materials

The main piece of equipment used for this study will be a video that will last between five and ten minutes. Four different versions of the video will be used. All four versions will include an eyewitness to a robbery testifying on the witness stand during a trial. An attorney will

ask the witness to explain what happened, and the witness will describe a scenario where he was in a convenience store when an unknown man came in, pulled out a gun, and demanded all of the money from the register. He will go on to explain that after taking all of the money, the suspect ran out of the store and disappeared down an alleyway. When asked to describe the suspect, the witness will give a short physical description. At this point the attorney will ask the witness if the man who robbed the convenience store is the defendant, to which the witness will respond affirmatively. It is important to note that due to the nature of the study, the testimony cannot justify a conviction on its own. If the average juror would convict the defendant in the case based solely on the witness' testimony, then any assessments of accuracy made in the manipulated conditions will not be valid. One would not be able to tell whether any of the conditions increased assessments of accuracy if those assessments were profoundly high at the beginning. Therefore, incorporated into the testimony will be the fact that the witness saw the robbery occur from the opposite end of the store from which it took place. The actor playing the role of the witness will also be instructed to hesitate several times both before answering a question and in the middle of some responses. This is meant to give the impression of some degree of uncertainty on the witness' part. We would verify that the testimony could not be seen as enough to warrant a conviction on its own through a series of pilot tests.

Version A of the video will depict only this testimony and nothing else. Similarly, Version B of the video will depict the testimony described above but it will also include one extra question from the attorney after the witness identifies the defendant as the perpetrator. Specifically, the attorney will ask the witness how confident he is that his testimony is accurate, to which the witness will reply that he is certain of his testimony's accuracy. Version C will first begin with expert testimony from a psychologist. While on the stand, the psychologist will

discuss the limitations of eyewitness accounts as well as go in depth on a few factors that can affect them such as race biases, the weapon focus effect, and factors that interfere with memory retrieval. Following the psychologist's testimony will be the same eyewitness account described above. Unlike Version B, this version will not include the section at the end where the witness expresses his level of confidence in his testimony. The last version of the video, Version D, will include all three sections described above. It will begin with expert testimony from the psychologist followed by the witness' testimony, including the section at the end where the witness expresses high confidence in his account.

Participants will fill out a brief questionnaire after watching the video. The questions will all deal with how the participants perceived the eyewitness, specifically their assessment of his accuracy. All responses will be on a scale from 1 to 10. For example, one question would be "If presented with a lineup of six people, do you think the witness would be able to pick out the perpetrator of the crime?" For this question, a participant who responds with '1' would believe that there was absolutely no chance of the witness making a correct identification from a lineup. On the other hand, a response of '10' would be given by a participant who thinks the witness would be able to accurately identify the perpetrator from a lineup 100% of the time. Some of the questions will be reverse scored in order to increase the reliability of the measure. For example, one of the questions will ask "Do you think the witness could make a false identification when presented with a lineup?" In this case, a lower number indicates that the participant perceives the eyewitness as more accurate.

Design

This experiment will have a 2 x 2 factorial design. The two independent variables are eyewitness confidence and expert testimony. Eyewitness confidence will be operationally

defined as whether or not the eyewitness verbally expresses high confidence in his testimony, and expert testimony will be operationally defined as whether or not the video includes testimony from a psychologist discussing some of the limitations of and factors that can affect eyewitness testimony. The dependent variable will be observer assessment, and it will be operationally defined by participants' responses to questions regarding the perceived accuracy of an observed eyewitness account. These responses will be on a scale from 1 to 10, with 1 reflecting no confidence and 10 reflecting full confidence.

Procedure

Participants will be tested one at a time, and the experiment will take place in a small room with a table and chair set up in front of a television. All of the participants will be randomly assigned to be in one of four conditions, and these conditions correspond to the version of the video that the participant will be watching. The control group will watch video version A, the confidence-only group will watch version B, the expert testimony-only group will watch version C, and version D will be viewed by the confidence-and-expert-testimony group (a.k.a. the dual factor group).

After watching the video specific to whatever condition the participant was assigned to, he/she will be asked a series of questions that will be answered on a scale from 1 to 10. The questions will all deal with the participants' assessments of the witness' accuracy. For example: "How confident are you that the witness' identification of the defendant as the perpetrator was accurate?" In this case, a response of 1 would indicate no confidence at all, and a response of 10 would indicate complete confidence in the identification.

Predicted Results

The purpose of the present study is to further examine the effects of both eyewitness

confidence and expert testimony on observer assessment of accuracy. The design of the study allows us to infer how both eyewitness confidence and expert testimony independently interact with observer assessment as well as allow us to see what happens when observers are presented with both confidence and expert testimony together.

Based on prior literature, it is hypothesized that eyewitnesses reporting a high level of confidence in their testimony will elicit an increase in observer assessment of accuracy (Kassin et al., 1991), while testimony from an expert in eyewitness research prior to the actual eyewitness' testimony will lead to a lower assessment of accuracy (Yarmey, 2001). The main question here is what changes in observer assessment would one detect when both high confidence and expert testimony are presented. Would one factor overpower the other and pull accuracy assessments in a certain direction, or will they balance each other out? For the present study, the hypothesis is that assessments of accuracy will be higher than those in the control group when both high confidence and expert testimony are present, supporting that eyewitness confidence would have more of an effect on accuracy assessments than expert testimony would (see Figure 1). It is predicted that eyewitness confidence will overpower any effects of expert testimony because the latter's effectiveness depends on the jurors' ability to understand the various phenomena at work and accurately judge the degree to which the phenomena are affecting their decisions. Not only must they understand all of this, but they must then have the ability to correct for these influences. In matters like criminal trials, one might assume that jurors would be able to accomplish these tasks; however, Harley et al. (2004) showed that even participants who were informed of hindsight bias were still unable to correct for its influence.

Discussion

As previously discussed, the average juror's inability to distinguish between an accurate

and an inaccurate eyewitness has surely led to many false convictions in the past (Chapman, 2002). One way in which contemporary psychologists have suggested to correct this is by allowing professionals in eyewitness research to testify as experts in a trial, speaking to the psychological factors that can interfere with testimony and recall. The proponents of this strategy argue that if jurors are better informed about the various shortcomings of eyewitness accounts, they will be more critical in their assessments of such accounts, and thus not be misled by false or inaccurate testimony (Yarmey, 2001). However, it is not enough for expert testimony to simply be useful in making observers more critical in a controlled study in a laboratory environment. When an actual witness is testifying about actual events in a real trial where a person's freedom hangs in the balance, all of the psychological phenomena discussed in this paper are also at work. This is where one must judge whether or not expert testimony actually makes a significant difference when combined with of these other factors.

In order to infer that expert testimony could make a significant difference in juror assessments of eyewitnesses from the present study, it would have to decrease observer assessments of confidence not only when presented independently, but also when presented along with a high confidence rating from the witness. According to the hypotheses of the study, the latter of these two criteria will fail to occur. Proponents of using expert testimony may argue that if the presence of expert testimony makes observers even slightly more critical than they were without hearing the testimony, then it should be implemented for use in trials. The predicted results of this study contradict this logic, illustrating that while expert testimony can make observers more critical of eyewitnesses when presented alone, presenting it alongside high eyewitness confidence makes this effect virtually nonexistent. In Kassin et al.'s (2001) research, psychologists agreed by a rate of over 80% that more than 20 eyewitness phenomena have been

sufficiently researched to be presented in court in the form of expert testimony. This conclusion only stands in a controlled lab environment, and not in the presence of other influential factors such as witness confidence. Therefore, while expert testimony may be a step in the right direction for ratifying the discrepancies between juror assessments of accuracy and the actual accuracy of eyewitnesses, it is still not effective enough to produce a significant change.

One must also look at the practical complications of utilizing expert testimony in trials involving eyewitnesses. Criminal prosecutors and defense attorneys, and therefore their clients as well, spend literally thousands of dollars in fees to bring in an expert to testify at a trial. These professionals can range in expertise from psychology to biology to forensic investigators and beyond. Keeping in mind that the thousands of dollars paid refers to each individual expert that is retained by the attorney, expert testimony fees can build up and cost astronomical amounts of money. Bringing in a psychologist to testify about factors that can influence eyewitness testimony is no exception. Taking into account the number of trials that involve eyewitness accounts that occur every day in this country, one could estimate additional hundreds of thousands if not millions of dollars being spent each day in court proceedings if this tactic were adopted. If the hypotheses of the current study were to be observed, most legal professionals would not consider this a wise or worthwhile investment. It does not matter whether a certain strategy would improve one's case or not, what counts is whether the strategy would improve the case enough to constitute a win. If the use of expert testimony does not influence juror assessments of accuracy to the point where it can effectively negate factors such as eyewitness confidence, then as far as the attorneys are concerned, it is not worth the money, time or effort.

One possible alternative to this would be to include a type of warning about eyewitness testimony in the juror instructions, urging them to use caution when assessing the testimony of

an eyewitness. If the present study illustrates that expert testimony does make observers more critical of eyewitness accounts – even though the effect is not significant enough to overcome other factors – then it would logically follow that, while it may not be worth the cost of hiring an expert to testify, the information is useful to some degree in a trial. By including at least a warning about the potential unreliability of eyewitnesses in the jury instructions, the basic message still reaches the jurors but at virtually no additional cost.

This strategy could also raise some concern however. For one, it is significantly less-detailed than an expert would be on the subject, so one may wonder if it would have the same effect on the jurors as the expert testimony would. More research would need to be done to analyze how much of an influence this updated set of jury instructions would have as opposed to a fully-detailed account of eyewitness research by a psychologist. Furthermore, both the prosecutors and the defense attorneys would have to agree on the wording of such instructions so as to not to bring about a bias toward one side or the other. Legal professionals would also have to agree on the point at which the jury would be given these instructions. Being told to use caution when evaluating eyewitness accounts can have different effects depending on whether it is given before a trial starts or after the trial is over prior to deliberations.

There are several limitations to the current study that would need to be addressed in future research on this highly controversial issue. For one, this study will only examine how expert testimony influences juror assessments of accuracy when presented alongside high eyewitness confidence. It does nothing to address the myriad of other factors that also affect eyewitness testimony, or how any of these relate to the presence of expert testimony. It would be interesting to study how observer assessments change when presented with, for example, expert testimony and the own-race bias. In this scenario, participants could observe a trial where

the defendant is of one race and the main eyewitness to the event is of another race. In this case, one could hypothesize that expert testimony, specifically detailing research on the own-race bias, would have a much greater affect on observer assessments of accuracy than it would in the present study. Applying the same logic, expert testimony may also have a greater affect in a scenario where stereotyping, hindsight bias, or stimulus familiarity are relevant. All of these conjectures are worth studying, as expert testimony may be more effective than it would seem by the hypothesized results of the present experiment.

A second limitation is the manner in which eyewitness confidence was operationally defined for the study. Rarely in an actual trial is the eyewitness asked to rate his or her confidence level outright. Kassin et al. (1991) reported that jurors most often assess a witness' confidence through subjective behavioral cues that include but are not limited to pausing, voice trembling, eye contact evasion, and facial expressions. A replication of this study might try to express eyewitness confidence by using some of these behavioral cues. For this to be done correctly, a significant amount of pilot testing would need to be done to determine exactly what types of behaviors would be appropriate to include as well as the frequency of these behaviors that would make the eyewitness account believable yet not enough to elicit a conviction on its own.

In addition to the operational definition of eyewitness confidence, one further aspect of the present study that makes it difficult to extrapolate to a real courtroom is the location. Conducting a study by running trials one participant at a time in a laboratory environment may lead to different results than if the study were conducted in a room set up to look like an actual courtroom with participants being scheduled in groups. The latter of the two would seem more like a real trial setting to the participants and may elicit more valid results. Along the same line,

if the study were conducted in a mock courtroom setting, it may be useful to use actors to reenact the testimony rather than have the participants watch a video. Again, this would make the experience seem more like a real trial. Using live actors may be difficult, however, because they could be inadvertently giving behavioral cues that suggest a lack of confidence, or they may act slightly different from trial to trial.

The alarming rate at which individuals are falsely accused of a crime based on faulty eyewitness testimony is a situation that requires immediate attention. A lot of informative research has been done on the factors that affect eyewitness recall, and many professionals argue that bringing up such research in the form of expert testimony could be a solution to the problem. The hypothesized results of the present experiment support the notion that while expert testimony may help in making jurors slightly more critical in their assessments of eyewitnesses, it would not be enough to overcome other factors like eyewitness confidence that are at work in a courtroom environment. Further research needs to be done not only to continue investigating the potential use of expert testimony, but also to look into alternative solutions to this major flaw in our country's justice system.

References

- Araya, T., Ekehammar, B., & Akrami, N. (2003). Remembering things that never occurred: The effects of to-be-forgotten stereotypical information. *Experimental Psychology*, 50, 27-32.
- Berman, G. L. & Cutler, B. L. (1996). Effects of inconsistencies in eyewitness testimony on mock-juror decision making. *Journal of Applied Psychology*, 81, 170-177.
- Chapman, S. (2002). When eyewitnesses screw up. *Slate Magazine*. Retrieved March 20, 2008, from <http://www.slate.com/?id=2065761>
- Cohen, G. & Faulkner, D. (1989). Age differences in source forgetting: Effects on reality monitoring and on eyewitness testimony. *Psychology and Aging*, 4, 10-17.
- Haber, L. & Haber, R. N. (1998). Criteria for judging the admissibility of eyewitness testimony of long past event. *Psychology, Public Policy, and Law*, 4, 1135-1159.
- Harley, E. M., Carlsen, K. A., & Loftus, G. R. (2004). The “saw-it-all-along” effect: Demonstrations of visual hindsight bias. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 30, 960-968.
- Kassin, S. M., Hosch, H. M., & Memon, A. (2001). On the “general acceptance” of eyewitness testimony research. *American Psychologist*, 56, 405-416.
- Kassin, S. M., Rigby, S. R., & Castillo, S. (1991). The accuracy—confidence correlation in eyewitness testimony: Limits and extensions of the retrospective self-awareness effect. *Journal of Personality and Social Psychology*, 61, 698-707.
- Lipton, J. P. (1977). On the psychology of eyewitness testimony. *Journal of Applied Psychology*, 62, 90-95.

- Loftus, E. F. & Palmer, J.C.. (1974). Reconstruction of automobile destruction: An example of the interaction between language and memory. *Journal of Verbal Learning and Verbal Behavior*, 13, 585-589.
- Maddox, W. T. & Estes, W. K. (1997). Direct and indirect stimulus-frequency effects in recognition. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 23, 539-559.
- McCloskey, M. & Egeth, H. E. (1983). A time to speak, or a time to keep silence? *American Psychologist*, 38, 573-575.
- Pickel, K. L. (1999). The influence of the context on the “weapon focus” effect. *Law and Human Behavior*, 23, 299-311.
- Poole, D. A. & White, L. T. (1991). Effects of question repetition on eyewitness testimony of children and adults. *Developmental Psychology*, 27, 975-986.
- Poole, D. A. & White, L. T. (1993). Two years later: effects of question repetition and retention interval on the eyewitness testimony of children and adults. *Developmental Psychology*, 29, 844-853.
- Robinson, M. D. Johnson, J. T. & Herndon, F. (1997). Reaction time and assessments of cognitive effort as predictors of eyewitness memory and accuracy and confidence. *Journal of Applied Psychology*, 82, 416-425.
- Robinson, M. D., Johnson, J. T. & Robertson, D. A. (2000). Process versus content in eyewitness metamemory monitoring. *Journal of Experimental Psychology: Applied*, 6, 207-221.
- Roediger, H. L. & Geraci, L. (2007). Aging and the misinformation effect: A neuropsychological analysis. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 33, 321-334.

- Smith, S. M., Stinson, V. & Prosser, M. A. (2004). Do they all look alike? An exploration of decision-making strategies in cross-race facial identifications. *Canadian Journal of Behavioural Science*, 36, 146-154.
- Yarmey, A. D. (2001). Expert testimony: Does eyewitness memory research have probative value for the courts? *Canadian Psychology*, 42, 92-100.

Figure 1

