



SCHOOL of  
GRADUATE STUDIES  
EAST TENNESSEE STATE UNIVERSITY

East Tennessee State University  
**Digital Commons @ East  
Tennessee State University**

---

Electronic Theses and Dissertations

Student Works

---

5-2009

# Eyewitness Recall of Noncriminal Events: An Examination of Demographic Characteristics with a Selected Population.

Jessica R. VanEaton  
*East Tennessee State University*

Follow this and additional works at: <https://dc.etsu.edu/etd>

 Part of the [Cognition and Perception Commons](#), and the [Demography, Population, and Ecology Commons](#)

---

## Recommended Citation

VanEaton, Jessica R., "Eyewitness Recall of Noncriminal Events: An Examination of Demographic Characteristics with a Selected Population." (2009). *Electronic Theses and Dissertations*. Paper 1821. <https://dc.etsu.edu/etd/1821>

This Thesis - Open Access is brought to you for free and open access by the Student Works at Digital Commons @ East Tennessee State University. It has been accepted for inclusion in Electronic Theses and Dissertations by an authorized administrator of Digital Commons @ East Tennessee State University. For more information, please contact [digilib@etsu.edu](mailto:digilib@etsu.edu).

Eyewitness Recall of a Noncriminal Event: An Examination of Demographic  
Characteristics with a Selected Population

---

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 of Criminal Justice and Criminology

---

by  
Jessica VanEaton  
May 2009

---

Dr. Larry Miller, Chair  
Dr. John Whitehead  
Dr. Michael Braswell

Keywords: eyewitness testimony, memory, recall, demographics

## ABSTRACT

### Eyewitness Recall of Noncriminal Events: An Examination of Demographic Characteristics with a Selected Population

by

Jessica VanEaton

The purpose of this study was to examine differences of recalled events from a selected university student population. Eyewitness testimony is frequently used to convict defendants each year. Many of these convictions are based solely on eyewitness accounts. While much has been written on the reliability of eyewitness testimony, little is known about demographic characteristic differences that may exist. A videotaped event was shown to a sample of college students who were then asked to complete a questionnaire based on what they watched. There were significant differences found in the respondents' accuracy in recalling events of the video according to demographic characteristics of the sample.

## DEDICATION

This thesis is dedicated to my husband and best friend, Lee VanEaton. You have made this journey possible. You have given me a strength I would have otherwise lacked. You kept me focused on my goal and gave me the support I needed to accomplish that goal. You are the love of my life and I am glad that you were by my side through this time in my life because I never could have done this without your love and support.

It is also dedicated to my one and only sister, Carrie Miller. Without you I never could have finished this thesis. You took time out of your life and your family to help me on this and for that I am eternally grateful. You are the best big sis that I could ever ask for. I know that my time will come to repay you for all that you have ever done for me.

Thank you both for helping me through this journey. I love you both.

## ACKNOWLEDGEMENTS

I would like to gratefully acknowledge the invaluable help of Dr. Larry Miller. Thank you for all your help, without I would have had more tears and been more stressed. You made this goal for me obtainable and I am so grateful that I had you to help me with my research. I would also like to thank all the teachers and participants for making this research possible. Without them this thesis could not exist.

Thanks also to my whole family: my mom and dad for being so supportive and for financially helping me achieve this goal, my in-laws for just being there when I need them and for surprisingly buying my school books at times, my work for allowing me the opportunity to go to school and work, my sister for reading every paper that I have ever written, and my husband for providing love and support.

I love you all and wouldn't have been able to do this without you.

# CONTENTS

	Page
ABSTRACT .....	2
LIST OF TABLES .....	7
Chapter	
1. INTRODUCTION .....	8
Statement of the Problem .....	9
Experimental Hypotheses .....	10
Variables .....	11
Independent Variables .....	11
Dependent Variables .....	11
Limitations .....	11
Assumptions .....	12
Definition of Terms .....	12
2. LITERATURE REVIEW .....	13
Introduction .....	13
Memory .....	20
Classes of Variables .....	21
Characteristics of the Witness .....	22
Characteristics of the Event .....	23
Situational Variables .....	25
Example Cases .....	28
Summary .....	31
3. RESEARCH METHODOLOGY .....	32
Hypotheses .....	32
Apparatus .....	33

Respondents .....	33
Independent Variables.....	34
Dependent Variables .....	35
Statistical Treatment.....	35
4. ANALYSIS OF DATA .....	37
Examination of Hypotheses .....	38
Hypothesis 1 .....	39
Hypothesis 2 .....	40
Hypothesis 3 .....	41
Hypothesis 4 .....	42
Hypothesis 5 .....	42
Hypothesis 6 .....	43
Hypothesis 7 .....	45
Assumptions Analysis.....	46
Summary .....	47
5. SUMMARY, CONCLUSIONS, AND IMPLICATIONS .....	49
Summary .....	49
Conclusions.....	50
Implications.....	53
REFERENCES.....	56
APPENDICES .....	60
Appendix A: Video .....	60
Appendix B: Questionnaire.....	61
VITA .....	69

## LIST OF TABLES

1. Demographic Characteristics of the Student Sample .....	37
2. Differences Between Urban and Rural Residents .....	40
3. Mean Differences Between Respondents with or without Siblings .....	41
4. Differences Between Employed or Unemployed Respondents .....	41
5. Age Differences Between Respondents .....	42
6. Differences Between Respondents with or without Children .....	43
7. Gender Differences Between Respondents .....	43
8. Cross Tabulation of Gender by Response to Question 1 .....	44
9. Cross Tabulation of Gender by Response to Question 2 .....	45
10. Differences Between Respondents Major Area of Study .....	46
11. Respondent Made Assumptions.....	47

## CHAPTER 1

### INTRODUCTION

The criminal justice system has customarily relied upon eyewitness testimony to convict suspects of crimes. In the past eyewitness testimony was acknowledged as the most reliable form of testimony, but recent research has shown it to be less credible. In reviewing the literature on eyewitness testimony, one fact becomes very clear—researchers believe that it is unreliable. Many opinions exist as to what factors influence testimony. When it comes to convictions it is important to consider the reliability of people's memory and the credibility of their testimony.

A person's memory has the ability to store, retain, and recall information about a particular event. There are three places where memory can be stored: sensory memory, short-term memory, and long-term memory. According to psychology studies, where an individual stores the information that was received affects the ability to recall that particular information later (Miller, 1956; Sperling, 1960). For instance, information stored in the sensory memory or short-term memory is only available for a certain period of time whereas information stored in the long-term memory has the potential of being stored for life. Also, life experiences can play a key role in a person's memory.

Wright (2000) stated that eyewitness errors are the most common cause of innocent people being falsely convicted. A courtroom is one place where memory can be of crucial importance because an eyewitness' testimony is what usually determines whether or not the defendant is convicted. Myers (1999) stated that in the United States alone, some 80,000 trials a year hinge on eyewitness testimony. With the introduction of newer evidentiary technology, genetic fingerprinting and DNA evidence, many

convictions based on eyewitness testimony are being re-examined. According to statistics, in 75% of the cases where DNA review leads to exonerations, mistaken eyewitness testimony was involved. It is because of this injustice that more information on eyewitness testimony and memory is needed. We need to know why people remember the information they do and what may affect or influence their memory.

### *Statement of the Problem*

In the American criminal justice system eyewitness testimony remains one of the most important sources of evidence in identifying, bringing to trial, and convicting suspects. During criminal trials the jury's decision to acquit or convict a suspect can often be the result of listening to the recollections of eyewitnesses. Unfortunately, eyewitness testimony is sometimes flawed and can place innocent people in prison. Memory is not a video tape; everyday occurrences and personal experiences have the potential to affect memory recall.

Everyday people make numerous recognition judgments often without any conscious effort. For instance, which purse is yours? Which car is yours? Which pen is yours? Eyewitness memory testimony is useful, but it has to be accurate.

There have been multiple studies on eyewitness testimony and memory. Previous studies focused on what an individual could recall about a particular event and how someone or something could affect a person's memory (Groome, 1999; Myers, 1999). However, not even one study has focused on the demographics of the participants and how those factors might affect one's memory. The purpose of this study focuses on how demographics or life experiences can affect one's memory.

Because individuals view and recall situations differently, it is these differences regarding the viewing and recalling of the situation that could affect the accuracy of their testimony. Certain personal life experiences such as age, jobs, marital status, and number of children one has can affect what and how much an individual recalls about a witnessed event. Personal experiences lead individuals to develop skills to recall certain details about a particular event.

The purpose of this research is to build on past research regarding why individuals recall certain information about a particular event. Did individuals remember what they perceived at the time because of their expectations, beliefs or current knowledge? This research is primarily aimed at gender specific recall by focusing on the participant's demographics and memory of the event. This research is designed to determine if demographics and life experiences play a role in what was remembered about an event. Results from this study may help further the knowledge of the reliability of eyewitness testimony and memory and help develop different ways of collecting eyewitness testimonies or determining validity.

### *Experimental Hypotheses*

This thesis proposes that personal life experiences can affect how and what an individual recalls about a noncriminal event. The experimental hypotheses are: 1) those who grew up in a urban area will have better recall of the video than those who grew up in a rural area, 2) subjects who grew up with siblings will be more likely to recall more information from the video than those who grew up as an only child, 3) those individuals who are employed will pick up on more details in the video than those who are not employed, 4) those persons who are older will recall more information from the video

than those who are younger, 5) those individuals who have children of their own will pay more attention to the verbal discussions in the video than those without children, 6) males will recall more visual details of the video, whereas females will recall more verbal details in the video, and 7) those respondents who are social or behavioral science majors will recall more details regarding people and activities in the video than those who are natural science majors.

### *Variables*

#### *Independent Variables*

The independent variables included those pertaining to the respondents, such as gender, age, employment status, marital status, whether they had children of their own, type of high school (public or private), residence growing up (urban or rural), siblings, year in school, and college major.

#### *Dependent Variables*

The main dependant variables in this study are who, what, and how much the subjects recalled about the noncriminal event. These variables are measured by the subjects' responses to the questionnaire. The subjects' answers to the questions allowed one to determine what and how much information they were able to recall about the noncriminal event.

### *Limitations*

As with any research, there are several limitations to the study. One limitation is the inability for each respondent to see and hear the video the same. Another limitation is balancing questions evenly among verbal and visual details to see what aspect each respondent paid more attention to and why. A third limitation is to incorporating the

same number of questions about each person in the video (adult male, adult female, male child, female child, and female baby). By eliminating these limitations it may more accurately reflect what each participant paid more attention to in the video. The last limitation is the selection of the respondents for the research. Appropriately selecting respondents who accurately reflect the larger population is difficult. In addition, it is difficult to determine the probability that the respondents included in the study are representative of the population. Accurately selecting the respondents for the research may make the statistics more accurate and reliable.

#### *Assumptions*

One assumption that is being made in this research is that respondents are being honest with their answers and following the directions given to them at the beginning of the research.

#### *Definition of Terms*

1. Eyewitness: persons who have sufficient knowledge of a fact or occurrence to testify about it and who give testimony under oath in court concerning what they have seen, heard, or otherwise observed (Abate, 1998).
2. Testimony: oral evidence offered by a competent witness under oath, which is used to establish some fact or set of facts (Abate).
3. Memory: the retention and ability to recall information, personal experiences, and procedures (Abate).
4. Recall: the ability to bring back from memory; remember (Abate).

## CHAPTER 2

### LITERATURE REVIEW

#### *Introduction*

“At the University of Washington, Elizabeth Loftus found that those you had ‘seen’ were indeed believed, even when their testimony was shown to be useless” (as cited in Myers, 1999, p. 601). Wright (2000) stated that eyewitness errors are the most common cause of innocent people being falsely convicted. A courtroom is one place where memory can be of crucial importance because an eyewitness’s testimony is what usually determines whether or not the defendant is convicted. As Haber and Haber (2000) note, “Most people feel they are aware of what they can and cannot remember about the events they observe and in which they participate and that they know about the factors that make their memory accurate” (p. 1,070). In criminal cases where eyewitness testimony is present, the eyewitness testimony is more likely to make the jurors produce a conviction because eyewitness incidents are difficult to erase from jurors’ minds. Jurors feel that a witness who can remember few details about the incident was more likely to be paying attention but those who pay attention to details are less likely to pay attention to the culprit’s face (Wells & Olson, 2003).

An indicator of testimonial accuracy is its consistency. When eyewitnesses contradict themselves from one interview to another about their testimony, a conclusion can be drawn that at least one of their statements has to be inaccurate. As a result, the eyewitness testimony as a whole is perceived to be less credible (Brewer, Potter, Fisher, Bond, & Luszcz, 1999). In addition, when witnesses report a certain amount of detail in one interview and less in another interview, it can also cause concern about the

overall accuracy of the witnesses' story. Myers (1999) stated that, "in the United States alone, some 80,000 trials a year hinge on eyewitness testimony" (p.602). Also, Myers found that out of the 7,500 errors in criminal convictions each year, 4,500 are based on mistaken identifications. This evidence suggests that eyewitness testimony can be unreliable and should be weighted accordingly in court. The longer the courts take to get an eyewitness' testimony on record the less accurate it will become. Eyewitness' memories are based partially on what they have perceived at the time and partially on their expectations, beliefs, and current knowledge (Haber & Haber, 2000). For that reason, eyewitness testimonies need to be retrieved as soon as possible in order to get a more accurate account of what happened.

The misinformation effect is when a person witnesses an event, receives misleading information about it, and then incorporates the misinformation into one's memory of the event (Wright, 2000). Having people retell their information accurately about an event helps them to later resist misleading information. On the other hand, the more that a person retells a story the more they can convince themselves of misinformation (Wright). People alter their stories to pacify their listeners, and in doing that they come to believe those stories as well. Groome (1999) stated that the "work of Bartlett (1932) demonstrated that story recall was extremely inaccurate and particularly prone to distortion by the subject's prior knowledge and expectations" (p. 131).

Eyewitness testimony is further influenced by information that is received after the event has occurred (Wright, 2000). After viewing an event, eyewitnesses may encounter post event information in three basic ways. First, "it may arise from biasing questions about the event" (Wright, p. 193). In other words, the way the question is

asked can change a person's memory. The second way post event information can be encountered is by the witness being given a description of the event (Wright). In doing this the witness can believe that they saw something that they never saw. For example, key witness number one said that an assailant was with an accomplice while key witness number two initially gave no description of this accomplice. However, after hearing what key witness number one stated, key witness number two later came to believe that there was another person with the assailant. The third way that an eyewitness may encounter post event information is when it is presented by another person (Wright). One person's testimony has the potential to distort another person's testimony.

In order to reduce errors and increase the accuracy of eyewitness testimony three steps can be taken. The first step is to train police interviewers; this helps to gain an accurate eyewitness testimony (Myers, 1999). The interview should begin with the eyewitness offering recollections of the event without being interrupted. The interviewer should have the witness visualize the scene and what he or she was thinking and feeling at the time (Myers). After the eyewitness has had enough time to express everything about the event, the interviewer can then start asking a series of questions. When asking questions, a person has to be careful with the wording of the question. Changing one word was enough to influence subjects, possibly by making a suggestion about what they should have seen (Groome, 1999). The second step is to minimize false lineup identifications. "One way to reduce misidentifications is to give eyewitnesses a 'blank' lineup that contains no suspects and then screen out those eyewitnesses who make false identifications" (Myers, p. 604). One can also have the

witness view one suspect at a time. If witnesses are made to view a group of people at one time, they are more likely to pick out the one that most resembles the culprit. Police can also state that the offender may not even be in the lineup. The last step to help with eyewitness testimony is to educate jurors on the reliability of testimony from eyewitnesses. In order to educate the jurors, “experts are now frequently asked, usually by defense attorneys, to testify about eyewitness testimony” (Myers, p. 604).

Judges and juries should realize that witnesses do not have perfect memories, and furthermore they should not rely on the evidence of eyewitness testimony alone. Groome (1999) found that statements from eyewitnesses should be taken immediately and the use of notes allowed when giving evidence in court. Most importantly, police interviewers should be careful about the way they ask their questions, and should not use questions or suggestions that lead to implanting misinformation into the heads of the witnesses.

In a study done by Loftus and Palmer (1974), it was shown how the wording of sentences can lead the jury to make presuppositions about the event and the defendant. The researchers showed their participants a film of an automobile accident and then questioned them about what they had seen. One of the questions was “About how fast were the cars going when they (*hit, smashed*) each other?” (Hunt & Ellis, 1999, p. 180). Half of the participants were given the verb *hit* and the other half were given the verb *smashed*. The participants who were given the verb *hit* gave lower estimates of speed than those who were given the verb *smashed*. The participants “who saw the *smashed* remembered seeing broken glass in the scene; most who saw *hit* did not” (Hunt & Ellis, p. 180). There was never any broken glass presented in the film. The

participants were influenced by presuppositions invoked by the verb *hit* and *smashed*. “*Smashed* presupposes a more violent collision, influencing both estimates of speed and amount of damage” (Hunt & Ellis, p. 180). These presuppositions influence memory of the actual event. There are two possible interpretations of the results of this study. One possible interpretation is that the participants were uncertain of the speed of the car but “biased their estimates in the appropriate direction of the suggestive verb” (Hunt & Ellis, p. 180). The other possible interpretation is that the verb was responsible for changing the participants’ memory of the scenes in the film.

Roper and Shewan (2002) examined how simple procedures can lead eyewitnesses to behave in a manner compliant to those in authority. Roper and Shewan determined that eyewitnesses would alter their responses to questions if they thought that an authority figure sees them as either helpful or unperceptive. “The experiment had a repeated measures design in which a participant’s eyewitness ability was measured before and after being labeled a ‘good’ or ‘poor’ eyewitness” (Roper & Shewan, p. 157). The participants, 40 undergraduate university students, in the study watched a short video clip concerning a sexually motivated attack and were then asked specific questions about what they had witnessed. At the end of the first part of the study, each person was randomly labeled ‘good’ eyewitness or ‘poor’ eyewitness. The study group then watched a second video involving a sexually motivated attack with the same assailant but a different victim. The participants were handed a questionnaire that had ‘good’ eyewitness or ‘poor’ eyewitness written on the top to begin with. The results confirmed the hypothesis that “those participants who had received a negative label (‘poor’ eyewitness) altered their original responses and submitted to leading questions;

whereas those who had received a positive label ('good' eyewitness) actually improved their eyewitness observation scores" (Roper & Shewan, p. 159). Therefore, the results imply that a simple manipulation by an authority figure can alter the responses of eyewitnesses.

In research done by Heath and Erickson (1998), they studied the effects of varying postevent information on memory for central and peripheral actions and also for props from a crime scene. They "pre-tested 105 undergraduates to obtain centrality ratings for target items (actions and props)" (Heath & Erickson, p. 321). The 105 undergraduates watched a crime scene in which a maintenance man enters an office, repairs a broken chair, sees a 20 dollar bill and a calculator, steals them, and then leaves. The subjects were to state the importance of the story based on the props and actions. In addition to this, 300 different undergraduates were presented with the same crime scene but it was followed by a thorough narrative description of the scene in which one target item was unchanged from the original presentation, one was changed (misleading), and one had an incorrect detail added (Heath & Erickson). The participants were tested using one of the four memory tests methods: item recognition, source recognition, cued recall, or sentence completion. The results showed that in all of the four types of memory tests, there was some form of misinformation effect in each area. "People were more resistant to misleading central than peripheral information, and readily accepted incorrect added details in recognition tests, but rarely generated them in recall or sentence completion" (Heath & Erickson, p. 340). One can draw two main conclusions from these results. First, peripheral items are more strongly influenced by misleading information than central items. Second, those people who

provide information about what they witness are unlikely to include every detail but are likely to agree to indirect details when questioned about the incident.

Wright, Loftus, and Hall (2001) conducted a study to find out if postevent misleading information could interfere with a person's memory about the original scene by altering and adding scenes. They performed two studies to show that being presented postevent information can interfere with a person's memory of the scene. In both studies, the participants were shown either an event in a restaurant scene or a drunk-driving incident. In experiment one, participants were shown the same scene but without the critical scene and were asked to generate a story of what they saw. However, people in experiment two saw the same scene without the critical scene but were asked to imagine the event this time. After viewing the videos and generating a story or imagining one, they were tested, which "led to fewer people reporting the critical scene in free recall and in recognition" (Wright et al., p. 480). This study shows that it is possible for people's memories to get distorted, which can hinder their memory of the actual scene.

Finally, in a study conducted by Naka, Itsukushima, and Itoh (1996), they took an incident that could happen in everyday life and tested to see the accuracy of a person's long-term memory. They had an individual pretend to be a customer at a particular store and had him or her purchase various items from a clerk. Three months after this incident, the conductors of the experiment went back to the store and asked the clerk for memory of the customer and the items that the customer purchased. They also had the clerk make a photo identification of the customer. The results showed that about half of the clerks remembered the details of the customer and the event, of which two

thirds were accurate (Naka et al.). However, when it came to the photo identification of the customer, out of the two thirds of subjects who picked out a photo, only 14% were accurate (Naka et al.). From these results it can be concluded that, unless something like curiosity or friendliness of the customer is shown, then it is difficult for one to remember the exact details of an incident in everyday life.

### *Memory*

Memory does not function like a video camera. A video camera is able to record and store an event on tape; therefore, the recorded event will not change over time. Memory can change and fluctuate based upon a person's ability to recall information. The memory process has three main stages that are used in the formation and retrieval of memory (Myers, 2004). The first is the encoding stage in which the information is received, processed, and combined with other received information into the memory system. This is followed by the storage stage, which is the creation of a permanent record of the encoded information. The final stage is the retrieval stage, which occurs when one tries to recall the stored information (Myers).

Memory has been categorized into three main stages: sensory memory, short-term memory, and long-term memory. The ability to recall an event or item with just a second of observation or memorization is an example of sensory memory (Myers, 2004). If one looked at a phone number, the image would be recorded and would then gradually decay in less than a second (Loftus, 1980). Sensory memory deals with the first 200-500 milliseconds after an item or event is perceived. Sperling (1960) conducted one of the first experiments exploring the sensory memory. Participants were shown a grid of three rows with three letters for a brief period of time and then were asked to

recall them immediately afterwards. The results showed that the participants were able to recall 4-5 letters of the 9 given. Sperling believed that all 9 letters were stored in the sensory memory for a brief period of time (5 milliseconds), but the memory failed so rapidly that only 4 or 5 could be recalled.

The purpose of the short-term memory is to retain information for a brief amount of time (several seconds to a minute). It is the storage of information that will not be needed in the future. Miller (1956) showed that  $7 \pm$  (plus or minus) 2 items could be stored in the short-term memory. Information in the sensory memory and short-term memory are only available for a certain period of time. Loftus (1980) states that if we are ever to avoid repeating mistakes and gain from our past experiences, information from our environment must make its way into long-term memory.

Long-term memory is the largest component of the memory system and can store an infinite amount of information (Myers, 2004). It can house information that was made a few minutes ago to several decades ago. The information in long-term memory has unlimited duration. Information from short-term memory that is repeated or rehearsed makes its way into long-term memory (Myers). For instance, given a seven-digit telephone number, one may remember it for only a few seconds before forgetting, suggesting it was stored in the short-term memory. However, one can remember a telephone number from many years ago through repetition because this information was stored in long-term memory (Myers).

#### *Classes of Variables*

In the real world when a person witnesses an important event such as a crime or traffic accident, that person is often asked to recall in detail the events that took place.

In situations like these it is important to recall as many details as possible in their testimony. However, experiment after experiment has shown that there are several factors that can influence the durability and accuracy of memory (Wells & Olson, 2003). There are three classes of variables within the existing literature that have been identified: 1) characteristics of the witness, 2) characteristics of the event, and 3) situational variables.

### *Characteristics of the Witness*

Characteristics of the witness are variables relating to the witness: age, gender, race, and emotions. Age is an important variable that may have effects on eyewitness testimony. Collecting information about an event from a minor can be difficult because of the rights and laws that exist for minors. Also, older adults can have age-related deficits in perception and memory that may make the value of their testimony questionable. Recent research shows that children younger than 12 years of age and older adults do not remember eyewitness information as well as children over the age of 12 and young adults (Cohen & Harnick, 1980; Yarmey & Kent, 1980). For example, Coxon and Valentine (1997) asked groups of young people ages 16 to 30 and older people ages 60 to 85 to watch a videotape of a staged crime. The results suggest that the younger group was significantly more accurate in recalling details and identification of the suspect.

There is conflicting evidence as to whether there are gender differences in the accuracy of eyewitness testimony. Although males and females might be interested in different aspects of a scene and thereby remember different details, overall abilities of males and females in eyewitness testimony appear to be largely indistinguishable

(Bringham & Barkowitz 1978, Power et al. 1979, Shaw & Skolnick 1999). Findings from previous research do not show significant differences in the accuracy of eyewitness testimony between males and females.

With respect to race, previous studies have shown that people tend to more accurately identify members of their own race or ethnic group (Brigham & Malpass, 1985). Regarding emotions, stress levels and arousal while observing a crime could have a significant impact on the ability to recall an event (Christianson, 1992, Egeth, 1993). However, this variable like gender differences has conflicting evidence. Some research show that performance improves as arousal or stress levels increase, some show that it gets worse, and some show that it has no effect (Christianson, Egeth).

#### *Characteristics of the Event*

Characteristics of the event include: amount of time the suspect is in view, distinctiveness of a suspect's appearance, weapon involved, knowledge of the situation, and seriousness of the crime. The amount of time that a suspect's face is in view affects the chances that the eyewitness can identify the suspect later (Wells & Olson, 2003). This characteristic has to factor whether or not the eyewitness paid attention to the suspect when in view.

Distinctiveness of a suspect's appearance can also affect the chances of an eyewitness identifying the suspect later. Faces that are more attractive or unattractive tend to be easier to recognize than average faces, but there is no definition of what is more attractive or unattractive (Wells & Olson, 2003). Based on this, everyone's scale of attractiveness will be different. If a suspect is wearing a disguise, that can impair an accurate eyewitness identification (Wells & Olson). But, a scar, tattoo, or deformation,

can aid in one being able to identify the suspect later. Changes in appearance can affect the ability to identify a suspect later. Read, Vokey, and Hammersley (1990) found that photos of a suspect taken 2 years apart were less likely to be recognized as the same person when their appearance had changed than when their appearance had remained the same.

The presence of a weapon indicates to eyewitnesses that a crime is occurring. Studies show that the presence of a weapon reduces the chances that the eyewitness can identify the suspect. Loftus, Loftus, and Messo (1987) examined eyewitnesses' eye movements by showing them two different robbery situations. In one situation, subjects saw a robber holding a cashier at gunpoint while in the other situation the robber handed a check to the cashier. The results showed that when weapons were present the attention would be focused on the weapon reducing visual attention to the suspect's face. This establishes the fact that concentration on one particular event can take away from the ability to focus on a potentially more important aspect of the event.

If a person is given information about an event before it occurs, this can influence how this person perceives it, what is looked at, what is paid attention to, and how much attention is paid to multiple details. Leippe, Wells, and Ostrom (1978) conducted a study to determine if previous knowledge of an event can influence the accuracy of the eyewitness' testimony. In their study unsuspecting people were exposed to a staged theft of a package. Some of the people were led to believe that the package contained an expensive item (calculator) while some were led to believe that the package contained an inexpensive item (cigarettes). During the theft the thief dropped the package on purpose to draw attention to him or her. Every person had the same

opportunity to view the thief. However, the witnesses who knew the value of the item before were significantly more accurate at identifying the thief in a photo line-up than the other witnesses. Although everyone had the same opportunity, advanced knowledge acts as a stimulus to pay more attention to details about the event. Otherwise, not everyone may realize that they have witnessed a crime until after it has occurred.

The study described above by Leippe et al. (1978) concluded that the apparent seriousness of the crime was a key factor in determining the accuracy of eyewitness testimony. However, there have been various results with the seriousness of the crime and accuracy of eyewitness testimony. The more serious a crime is perceived or is may in fact reduce the overall accuracy of eyewitness testimony. Research results have shown that more serious events can be less accurate in recall when compared with less serious events. Other research studies have shown that during more serious crimes witnesses may pay more attention to the offender and less attention to the other persons involved or the surroundings (Christianson & Hubinette, 1992; Clifford & Scott, 1978).

### *Situational Variables*

Situational variables are those that affect the accuracy of eyewitness testimony and those that the criminal justice system controls. These variables included police techniques such as time, interviews, question wording, confidence, and lineups. This also includes postevent information such as misinformation and suggestibility. The way that police acquire information from an eyewitness may affect the accuracy of the testimony. With respect to memory, Sperling (1960) states that people can report more information right after exposure to an event because the availability of the information

will decline rapidly. In a study conducted by Lipton (1977) the results suggest that a time delay between an eyewitness's observation and testimony affects the accuracy and amount of the testimony. The longer the time between when a person witnesses an event and the time of recall, the less accurate the memory will be and this is supported by Sperling's results. Recall given by an eyewitness directly after witnessing an event is highly accurate (Clifford & Scott, 1978).

Certain interviewing techniques used by police to gather information from a witness can make the testimony unreliable. The police, in wording a question, can influence a witness's memory. Loftus (1975) had participants watch a video in which a car speeds through a road sign (stop or yield) and causes an accident. The participants who viewed the yield sign were asked whether or not they saw a stop sign. Fifty-nine percent of those participants reported that they saw a stop sign even though they had viewed the yield sign. Leading questions might alter the testimony of the eyewitness.

When the police support the decision made by the witness this boosts the witness's confidence that they have made a right choice. Wells and Bradfield (1998) found that witnesses who identify a suspect from a group of people are more confident of the choice they made when given positive feedback.

The method in which police lineups are conducted could also affect the accuracy of eyewitness testimony. Prior viewing of photographs before a lineup can lead to false identification because previous exposure to a face makes that face become more familiar and more likely to be identified later. Wells et al. (1998) proposed three recommendations for properly conducting lineups. The first recommendation is that the police officer giving the lineup should not know who the suspect is. Second, the witness

should be warned each time that the suspect may or may not be present in the lineup. Lastly, the fillers in the lineup should match the description of the suspect that was provided by the witness.

After an event has occurred, a witness can be exposed to numerous amounts of information that is then entwined with the memories of the event (Loftus & Hoffman, 1989; Gudjonsson, 1984). This post event information can come in two forms: 1) misinformation and 2) suggestion. When postevent information exists a person comes to believe certain details happened in the event that actually never occurred (Loftus & Hoffman; Gudjonsson). Therefore, it is difficult to know where each specific detail was recalled.

Misinformation and suggestibility can work together to influence an eyewitness. Misinformation can come from being questioned by an investigator, overhearing another witness talk about the event, newspapers, etc... Accepting this misinformation is referred to as suggestibility (Gudjonsson, 1984). Exposure to misinformation after witnessing an event can alter memory, which makes future recollections more difficult and possibly less accurate. Loftus and Hoffman (1989) state four reasons misinformation can occur. Reason one, witnesses exposed to misinformation by the media may believe it because their recollection of the event is incomplete and the misinformation fills the gaps. Reason two, if witnesses are unsure of their own memory misinformation can occur when that witness' recollection of the event is influenced by another witness. Reason three, a witness may guess an answer to a question from an investigator if feeling uncomfortable or pressured. Reason four, the original memory of the event could be accurate but misinformation might get in the way when it is time to

retrieve the memory. Typically, witnesses who are more suggestible are more likely to incorporate misinformation into their memories.

### *Example Cases*

Because of the aforementioned variables innocent individuals have been sentenced to lengthy prison terms based solely on an eyewitness's testimony. Wells et al. (1998) researched 40 cases and all 40 convictions were reversed by DNA evidence. In 36 of these cases the individuals were incarcerated based only on an eyewitness's testimony. One example is the Harris and Adams case (Miller, 2006). A police officer had pulled a vehicle over at night to let the occupants know that their headlights were off. The driver of the car pulled out a gun, shot, and killed the officer. A month later suspect Harris was found but denied that he shot the officer. Harris claimed that he had picked up a hitchhiker who was driving the car and killed the officer. The second suspect Adams, who was the hitchhiker, stated he was innocent but three witnesses claimed they saw him shoot the officer because Adams fit their description as having a mustache and long hair. Adams was charged for the murder because of the witnesses' descriptions even though Harris later confessed to stealing the car and loading the gun. Years later, Harris was charged for a different murder and confessed on death row that he shot the police officer for which Adams was convicted of. Adams was released after serving a 12-year sentence on death row for a crime that he did not commit. Those three witnesses convicted the wrong person.

The Cashin case is another instance in which eyewitness testimony convicted the wrong person (Loftus, 1991). Two men entered a speakeasy to commit a robbery. A gun battle ensued with two officers and the two alleged perpetrators, resulting in the

death of a robber and police officer. An investigator began his investigation by identifying the deceased robber, gathering information from witnesses, and interviewing 19-year-old Cashin, who was a former employee of the speakeasy. All witnesses were present at police headquarters when Cashin arrived for questioning. None of the witnesses identified Cashin as having any part in the crime. However, several months later a prostitute who allegedly had been to the speakeasy identified him as the robber. Because of this one eyewitness's testimony, Cashin was arrested for murder and placed on trial. If convicted of murder he could face the death penalty. At the trial all the prosecution had was the prostitute's testimony. The defense had more evidence of his innocence such as Cashin not resembling the description made by the other witnesses and the prostitute had previously sworn that she could not identify the robber. Even with all this evidence in Cashin's favor, the jury found him guilty of murder in the first degree. Eventually, the conviction was reversed but Cashin could have spent the rest of his life behind bars as a result of the faulty testimony of one witness.

In 1979 Clark McMillan was convicted of rape and robbery with a deadly weapon and sentenced to serve 119 years in prison for a crime that he did not commit ("Clark McMillan"). A 16-year-old victim and her boyfriend were abducted from a park in the Memphis, Tennessee area. They were forced out of their vehicle by a man holding a knife. The perpetrator robbed the boyfriend and forced them both into the woods, where he ordered them to undress. He ordered the boyfriend to lay face down on the ground while he raped the 16-year-old victim. After completing the rape the perpetrator fled the scene. The victim and her boyfriend were driven to her Sunday school teacher's house where the doorman notified the police, who questioned the victims and collected

evidence. Semen was located all over the victim and her clothes; however, no testing was performed at the time of trial. The victim and her boyfriend gave similar descriptions of their attacker but neither mentioned a limp. McMillan had been shot in the leg 2 years earlier and wore a leg brace, which made him walk with a noticeable limp. At trial, the limp was added to the victim's descriptions. Also, when the victims were shown a photo spread the victim did not pick anyone and her boyfriend picked a filler. Then, at the lineup, the victim identified McMillan and the boyfriend again picked a filler. Nevertheless, at trial both identified McMillan. McMillan had an alibi; he was at his sister's house with his girlfriend at the time that the crime occurred. Even though his sister and girlfriend testified and support his alibi, he was still convicted. Eventually, his appeal was granted and the semen from the blue jeans was tested and revealed that Clark McMillan was not the rapist. He was released from prison in 2002. McMillan had spent 22 years in prison for crimes he did not commit.

Twice in July 1984, an assailant broke into an apartment and sexually assaulted two women ("Ronald Cotton"). In August 1984, Ronald Cotton was arrested for these crimes and convicted in November 1987 of both rapes and burglary. The only evidence that the prosecutor's had was the identification by the victims. Cotton was retried because a man in prison, Bobby Pool, who had been convicted for similar crimes, told another inmate that he had committed the crimes for which Cotton had been convicted. Cotton was still convicted in the retrial of both rapes. Cotton's appeal was granted and DNA testing was done on one of the victim's underwear. It showed no match to Cotton. It did, however, match Bobby Pool, the man who had earlier confessed to the crimes. In June 1995, Cotton was cleared and released from prison. He served 10.5 years in

prison for a crime that Bobby Pool had committed because an eyewitness identified the wrong man. The case has brought about an incredible story. Click on this link <http://www.cbsnews.com/video/watch/?id=4852659n> to view this amazing story of the eyewitness who identified Cotton as her assailant.

These are just a few cases of many that exist showing a witness's memory is not always accurate and can be altered. These people and their cases described above were able to get their cases reversed. There are more innocent people in jail serving long sentences for crimes they did not commit. There are too many variables that can affect one's memory even without a determined attempt. Research on eyewitness testimony will continue to grow because of this fact.

#### *Summary*

Eyewitness testimony in the past has carried weight in the courts, when it is possibly the weakest form of testimony. It has been researched and reported that many variables can alter the memory of the event resulting in altered testimony. If eyewitness testimony is going to continue as a legitimate source of evidence, there should be standards in retrieving and portraying the testimony accurately. The literature has been very valuable; however, the research is lacking information on the demographics of the eyewitness. Considering the importance of the eyewitness' demographics, more studies should focus on the relationship of eyewitness testimony and demographics. There is a need to study this area and find ways in which the accuracy of eyewitness testimony can be evaluated. Also, we need to determine the way in which questions are asked and when.

CHAPTER 3  
RESEARCH METHODOLOGY

*Hypotheses*

It was the purpose of this research to determine if certain demographic characteristics such as gender and life experiences play a role in what was remembered about an event. The basic hypothesis postulates that personal life experiences may affect how and what an individual recalls about a noncriminal event.

Based on prior research, the following hypotheses were formulated:

1. Those who grew up in an urban area will have better recall of a video recorded event than those who grew up in a rural area.
2. Subjects who grew up with siblings will be more likely to recall more information from a video recorded event than those who grew up as an only child.
3. Those who are employed will recall more information from a video recorded event than those who are not employed.
4. Older respondents will recall more information from a video recorded event than younger respondents.
5. Those respondents who have children of their own will recall more verbal information from a video recorded event than those who do not have children.
6. Male respondents will recall more visual details of a video recorded event, whereas females will recall more verbal details.
7. Respondents who are social or behavioral science majors will recall more information about people in a video recorded event than those who are natural science majors.

In order to test these hypotheses, it was necessary to produce a video recorded event of a noncriminal nature (see Appendix A). A videotape was made of five people - an adult male, an adult female, a male child age 9 years, a female child age 7 years, and a female baby. In the video, these individuals engage in various noncriminal

activities such as social conversation, playing card games, and viewing photographs. The video is set in a small living room environment with normal lighting. The video is 2 minutes and 16 seconds in length.

### *Apparatus*

A 70-item questionnaire was constructed based on events that were portrayed in the video recorded event. The questionnaire was developed around the hypotheses for the present study and included questions that covered details regarding the people, room, activities, and verbal conversations that were shown in the video recorded event. There were also questions regarding assumptions that the respondent might make that were not mentioned in the video. The questionnaire was designed to be completed within 10 minutes with forced choice answers to questions. The questionnaire was pretested for validity and reliability with a graduate Research Methodology class and was refined to reflect suggestions made by the graduate students (see Appendix B).

### *Respondents*

A nonprobability purposive sample was determined to provide the most useful data for the present study. Undergraduate and graduate level classes in required courses at East Tennessee State University were selected to provide the necessary respondents for the present study. These student respondents were determined to have a sufficient range of variation demographically to address the hypotheses.

Several undergraduate and graduate classes in Criminal Justice and Psychology were used to acquire respondents. Classes were selected based on professor's assessment of the demographic make-up of their students. This assessment consisted of how many students were enrolled in classes, what their majors were, male to female

ratio, and a rough age range. The classes selected had over 200 students enrolled, which was statistically satisfactory for the present study.

Before watching the video each respondent was read a script which stated, "Hello class! My name is Jessica VanEaton, and I am a graduate student at East Tennessee State University. I am working on my master's degree and in order to finish my studies, I need to complete a research project. At this time I am unable to tell you what the research is about because I feel that it will affect the end results of my study. The study does consist of a brief video and questionnaire. This whole process should only take about 10-20 minutes. If you choose to participate in this study your grade will not be impacted in any way. As you can see your professor is not in the room and will not be in the room until the study is completed. For those that would be willing to participate you must be over the age of 18 and for those that would not like to participate if you would please step out into the hallway until the study is completed." The video was then shown to all the respondents who chose to participate. After the video was complete, each respondent was provided with a waiver letter of consent that consisted of the purpose of this study, advised them how their participation was strictly voluntary and confidential, and the numbers to reach if they had any research related questions. After the respondents had completed the questionnaire, they were able to ask questions about the study and then thanked for their voluntary service.

### *Independent Variables*

The demographic independent variables under consideration were: gender, age, employment, marital status, children, education, residence, siblings, and academic major. These variables were measured on a nominal, dichotomous scale. Gender was

measured as male or female; age was measured younger (under 30) or older (over 30); employment as either yes or no; children as yes or no; type of education as public, private, or home schooled; residence as rural or urban; siblings as yes or no; and, major as social or behavioral science or natural science.

### *Dependent Variables*

The dependent variables were measured on a correct or incorrect scale to the questions regarding people details, room details, activities, verbal communication, and assumptions shown on the video recorded event. Because many questions covered these areas, an interval scale was produced to provide a mean and standard deviation for correct or incorrect answers to the item questions. Questions 3 through 13 on the questionnaire dealt with the room description in the video. Questions 14 through 18, 20, 21, 23 through 51, 53 through 58, 61, 62 and 66 dealt with verbal communications that was in the video. Questions 19, 52, and 59 dealt with activities that were conducted in the video. Questions 60 and 67 through 70 dealt with the details of the people that were in the video. Questions 63 through 65 dealt with assumptions the respondent may have had regarding the participants in the video. Finally, Questions 1 and 2 were open-ended questions regarding the people and activities in the video. With the exception of questions 1 and 2, all other questions were intervally scaled variables which allowed for a mean and standard deviation to be calculated. The answers to questions 1 and 2 were nominally measured as categorical.

### *Statistical Treatment*

Descriptive statistics were used to describe the demographic characteristics of the respondents. Because the independent variables were measured on a nominal,

dichotomous scale and the dependent variables were measured on an interval scale, a t-test for independent groups was used to test hypotheses. Where appropriate, with questions 1 and 2 on the questionnaire, a Chi-Square test was used to determine significant relationships with Phi and Cramer's V to test the strength of significant relationships.

CHAPTER 4  
ANALYSIS OF DATA

The videotaped event and questionnaires were distributed to one graduate class and four undergraduate classes at East Tennessee State University. The total number of students in the respondent sample was 207, which was statistically and administratively manageable. Table 1 depicts the demographic characteristics of the student sample.

Table 1

*Demographic Characteristics of the Student Sample*

Characteristic	Frequency	Percent	Characteristic	Frequency	Percent
<b>Gender</b>			<b>Education</b>		
Male	99	47.8	Public	203	98.1
Female	108	52.2	Private or Home School	2	1.9
Total	207	100.0	Total	207	100.0
<b>Age</b>			<b>Residence</b>		
Young (Under 30)	169	81.6	Rural	187	90.3
Older (Over 30)	38	18.4	Urban	20	9.7
Total	207	100.0	Total	207	100.0
<b>Employed</b>			<b>Siblings</b>		
Yes	116	56.0	Yes	126	60.9
No	91	44.0	No	81	39.1
Total	207	100.0	Total	207	100.0
<b>Marital Status</b>			<b>Classification</b>		
Married	105	50.7	Undergraduate	189	91.3
Unmarried	98	47.3	Graduate	18	8.7
Total	207	100.0	Total	207	100.0
<b>Children</b>			<b>Major Area of Study</b>		
Yes	104	49.8	Social or Behavior Science	142	68.6
No	103	50.2	Natural Science	65	31.4
Total	207	100.0	Total	207	100.0

As the data in Table 1 indicate, respondents were fairly equal in terms of gender, employment, marital status, and children. Understandably, most of the respondents, being college students, were under 30 years old. The majority of the respondents were educated in public schools, lived in rural areas, and were undergraduate students. Almost two thirds of the respondents grew up with siblings and listed a social or behavioral science as their major area of study (i.e., psychology, social work, criminal justice, and sociology). Approximately one third of the respondents were majoring in chemistry, biology, nursing and other health sciences, or geology.

### *Examination of Hypotheses*

There were seven hypotheses formulated for the present study:

1. Those who grew up in an urban area will have better recall of a video recorded event than those who grew up in a rural area.
2. Subjects who grew up with siblings will be more likely to recall more information from a video recorded event than those who grew up as an only child.
3. Those who are employed will recall more information from a video recorded event than those who are not employed.
4. Older respondents will recall more information from a video recorded event than younger respondents.
5. Those respondents who have children of their own will recall more verbal information from a video recorded event than those who do not have children.
6. Male respondents will recall more visual details of a video recorded event, whereas females will recall more verbal details.
7. Respondents who are social/behavioral science majors will recall more information about people in a video recorded event than those who are natural science majors.

The questionnaire was designed to elicit information from the respondents about what they recalled from the video recorded event. The respondents answered questions regarding details of the room, verbal communications, and details of activities that were taking place in the video. If the respondent answered the question correctly, it was coded as a 1.00 score. If the respondent answered incorrectly, it was scored 2.00. Because there were several questions for each category (i.e., room details, activities, people details, and verbal communication), a lower mean score indicated more accurate responses in recalling details from the video. In addition, respondents answered questions regarding assumptions they may have made that the video did not provide a clear answer to. For example, nothing in the video discussed whether the two adults were married or if the children belonged to them.

### *Hypothesis 1*

The first hypothesis was: those who grew up in an urban area will have better recall of the video than those who grew up in a rural area. Based on the literature, it was suggested that individuals from urban areas are more likely to notice their surroundings due to being accustomed to increased activities and being aware of safety issues. The t-test showed mixed results with the present study. As the data in Table 2 depict, there were significant differences between urban residents and rural residents. Urban residents were more likely to accurately describe details about activities that were in the video, whereas rural residents were more likely to accurately describe details about people in the video. A lower mean score indicates the respondents had fewer incorrect answers to the questions relating to the video. There were no significant differences between rural and urban residents with respect to details of the room and

verbal communications that were in the video. Some caution should be taken with regard to findings as only 20 respondents indicated they were raised in a predominately urban area.

Table 2

*Differences between Urban and Rural Residents*

	Urban Mean	Rural Mean	t-test	df	Significance (2-tailed)
Room Details	1.76	1.59	-1.75	205	.082
Activity Details	1.17	1.36	3.24	205	.001
People Details	1.63	1.20	-6.66	205	.000
Verbal Details	1.32	1.45	1.77	205	.079

*Hypothesis 2*

The second hypothesis was: subjects who grew up with siblings will be more likely to recall more information from the video than those who grew up as an only child. The assumption for this hypothesis was that respondents who grew up with siblings would be better able to understand multiple conversations and activities than those who were an only child in a family. The t-test analysis tends to support this assumption. As the data in Table 3 indicate, those respondents who grew up with siblings were more likely to accurately recall details regarding activities and verbal communications than those who were an only child. Respondents who were an only child were more likely to accurately recall details about the room in which the video took place. There was no significant difference between respondents with respect to recalling details about the people in the video.

Table 3

*Mean Differences between Respondents with or Without Siblings*

	Siblings		t-test	df	Significance (2-tailed)
	Yes Mean	No Mean			
Room Details	1.83	1.26	-13.02	205	.000
Activity Details	1.24	1.49	7.67	205	.000
People Details	1.24	1.26	0.44	205	.657
Verbal Details	1.26	1.72	14.82	205	.000

*Hypothesis 3*

The third hypothesis was: those who are employed will pick up on more details in the video than those who are not employed. The reasoning behind this hypothesis was that people who are employed are more likely to pay attention to details than those who are not employed. The t-test analysis showed mixed results. As the data in Table 4 depict, those who were employed were more likely to accurately recall details about the room in which the video was made. However, those who were not employed were more likely to accurately recall details about activities, people, and verbal communications in the video.

Table 4

*Differences between Employed and Unemployed Respondents*

	Employed		t-test	df	Significance (2-tailed)
	Yes Mean	No Mean			
Room Details	1.38	1.90	-11.39	205	.000
Activity Details	1.45	1.21	7.54	205	.000
People Details	1.35	1.11	6.34	205	.000
Verbal Details	1.64	1.18	16.04	205	.000

#### *Hypothesis 4*

The fourth hypothesis was: those respondents who were older will recall more information from the video than younger respondents. The assumption being that older individuals have more personal life experiences and are better able to process memory recall than younger individuals. This was found to be partly true. As the data in Table 5 indicate, older respondents (over 30 years old) were more likely to accurately recall verbal communications in the video, whereas younger respondents (under 30 years old) were more likely to accurately recall details about the room in the video. There were no significant differences between the age of respondents and how accurate they were in recalling details about activities and people in the video.

Table 5

#### *Age Differences between Respondents*

	Age		t-test	df	Significance (2-tailed)
	< 30 Mean	>30 Mean			
Room Details	1.58	1.83	-2.79	205	.006
Activity Details	1.35	1.29	1.01	205	.314
People Details	1.24	1.27	-0.38	205	.705
Verbal Details	1.46	1.26	2.97	205	.003

#### *Hypothesis 5*

The fifth hypothesis was: those respondents who have children of their own will pay more attention to the verbal discussions in the video than those without children. Those respondents who had children of their own were not only found to more accurately recall verbal details in the video but were also more accurate in recalling details about people and activities in the video. However, those respondents without

children were found to be more accurate in recalling details about the room in the video than those with children (see Table 6).

Table 6

*Differences between Respondents with or Without Children*

	Children		t-test	df	Significance (2-tailed)
	Yes Mean	No Mean			
Room Details	1.86	1.35	-10.99	205	.000
Activity Details	1.22	1.47	7.81	205	.000
People Details	1.17	1.33	3.91	205	.000
Verbal Details	1.21	1.67	16.57	205	.000

*Hypothesis 6*

The sixth hypothesis for the present study was: males will recall more visual details of the video, whereas females will recall more verbal details in the video. This hypothesis was supported by the t-test analysis. As the data in Table 7 depict, males were able to accurately recall room details more accurately than females. Females, on the other hand, were significantly more accurate in recalling details about activities, people, and verbal communications than the male respondents.

Table 7

*Gender Differences between Respondents*

	Gender		t-test	df	Significance (2-tailed)
	Male Mean	Female Mean			
Room Details	1.53	1.68	-2.75	205	.007
Activity Details	1.50	1.20	10.20	205	.000
People Details	1.33	1.17	3.91	205	.000
Verbal Details	1.56	1.33	5.96	205	.000

Gender was also examined with two open-ended questions on the questionnaire.

Question number 1 asked respondents to indicate who they paid most attention to in the video. The respondents overwhelmingly selected three persons that were portrayed in the video. The three persons were a little girl playing cards, an adult male walking around in the room and playing cards with the little girl, and an adult female holding a crying baby. This question was analyzed using Chi-Square in a contingency table. As the contingency table indicates (Table 8) there was a significant difference between male and female respondents to this question (Chi-square = 70.06, 2 degrees of freedom,  $p < .001$ ). The Cramer's V of .58 indicates a strong relationship between gender and what part of the video respondents paid most attention to. Males were more likely to pay attention to the little girl in the video, whereas females were more likely to pay attention to the adult male or the baby.

Table 8

*Cross Tabulation of Gender by Response to Question One*

	Male		Female		Total	
	N	%	N	%	N	%
Adult Male	14	14.1	38	35.2	52	25.1
Baby	2	2.0	40	37.0	42	20.3
Little Girl	83	83.8	30	27.8	113	54.6
Total	99	100.0	108	100.0	207	100.0
Chi-Square = 70.06		df=2	p<.001		Cramer's V = .582	

Question 2 on the questionnaire was also an open-ended question that dealt with what particular event was remembered most in the video. Two events were portrayed in the video. One was of a little girl and an adult male playing cards and the other was of an adult female holding a baby and looking at pictures with a little boy. A Chi-square test was conducted to determine if there was a significant difference with gender and

what event was remembered in the video. As the contingency table indicates (Table 9), there was a significant difference between male and female respondents to this question (Chi-square = 14.27, 1 degree of freedom,  $p < .001$ ). The Phi of .26 is a moderate relationship between gender and event remembered in the video. Male respondents were most likely to remember the card-playing event with the little girl, whereas female respondents were more likely to remember the adult female looking at photographs with the little boy.

Table 9

*Cross Tabulation of Gender Response to Question Two*

	Male		Female		Total	
	N	%	N	%	N	%
Card Playing	53	53.5	30	27.8	83	40.1
Looking at Photos	46	46.5	78	72.2	124	59.9
Total	99	100.0	108	100.0	207	100.0

*Hypothesis 7*

The seventh and last hypothesis was: those respondents who are social or behavioral science majors will recall more details regarding people details in the video than those who are natural science majors. The assumptions being that those who are interested more in people are more likely to become interested in careers associated with social or behavioral sciences. And, those who pay more attention to details are more likely to be attracted to natural science vocations. The t-test analyses supported this hypothesis. As the data in Table 10 depict, those respondents who were social or behavioral science majors were significantly more accurate in recalling details about activities, people and verbal communications than natural science majors. Those

respondents who were majoring in a natural science were significantly more accurate in recalling details about the room in the video.

Table 10

*Differences between Respondents Major Area of Study*

	Major Area of Study		t-test	df	Significance (2-tailed)
	Soc/Behavioral Mean	Natural Science Mean			
Room Details	1.86	1.01	36.69	205	.000
Activity Details	1.26	1.55	-8.53	205	.000
People Details	1.21	1.34	-2.84	205	.005
Verbal Details	1.30	1.77	-13.65	205	.000

*Assumptions Analysis*

One area the researcher wished to explore was assumptions. The video portrayed a man and woman with three kids in a living room. There was no mention of what the relationship was between the man and woman (married or not) and the relationship of the children to the adults in the video. Some questions on the questionnaire asked respondents if the man and woman were married and if the children belonged to them. There was no indication in the video that the man and woman were married or if the children actually belonged to them. Those respondents who answered, “do not know” to these questions were coded as not making an assumption or, correct (scored as 1.00). However, if the respondents made an assumption, they were coded as incorrect (scored as 2.00). Because some respondents made assumptions on some questions and not others, mean scores were calculated for the assumption questions and subjected to t-test analyses. As the data in Table 11 indicate, females, those respondents who were not employed, married, had no children, grew up with siblings, and were a social or behavioral science major were

more likely to make incorrect assumptions about the participants in the video. There were no significant differences with age (under 30 or 30 and older) or place of residence (urban and rural).

Table 11

*Respondent Made Assumptions*

Characteristic	Mean Score	t-test	df	Significance (2-tailed)
<b>Gender</b>				
Male	1.45	-10.55	205	.000
Female	1.91			
<b>Age</b>				
Under 30	1.68	-1.24	205	.218
Over 30	1.78			
<b>Employed</b>				
Yes	1.59	-4.27	205	.000
No	1.81			
<b>Married</b>				
Yes	1.82	-5.02	205	.000
No	1.56			
<b>Children</b>				
Yes	1.54	-5.83	205	.000
No	1.83			
<b>Siblings</b>				
Yes	1.80	-5.46	205	.000
No	1.52			
<b>Major</b>				
Soc/Behavioral	1.83	9.49	205	.000
Natural Science	1.36			
<b>Reside</b>				
Urban	1.67	0.27	205	.784
Rural	1.69			

*Summary*

All seven hypotheses were either wholly or partially supported. Those respondents who grew up in an urban area were more accurate in recalling events about the activities in the video, whereas rural residents were more accurate recalling details of the people in the video. Those respondents who grew up with siblings were more accurate in recalling events about activities and verbal communications in the

video, whereas those respondents who were an only child accurately recalled details about the room in the video. Employed respondents were most likely to accurately recall details about the room in the video, whereas those who were not employed could recall details about activities, people, and verbal communications in the video. Older respondents tended to be more accurate in recalling verbal communications and younger respondents were able to accurately recall details about the room in the video. Those respondents who had children of their own were more accurate in recalling activities, detail of the people, and verbal communications in the video. Male respondents were most apt at recalling details about the room, but females were more accurate in recalling activities, people details, and verbal communications. Also, males seemed to pay more attention to movements and females tended to pay more attention to interaction between people. The little girl in the video was very active and moving about while the others were relatively still in their positions. Respondents who were majoring in a social or behavioral science were more accurate in recalling details about activities, people, and verbal communications than natural science majors. Natural science majors, on the other hand, were more accurate in recalling details of the room presented in the video. There were significant differences noted in those respondents who tended to make assumptions regarding the relationships in the video. Respondents who were female, unemployed, married, had no children, grew up with siblings, and majored in a social or behavioral science were more likely to make unfounded assumptions than their counterparts.

CHAPTER 5  
SUMMARY, CONCLUSIONS, AND IMPLICATIONS

*Summary*

The purpose of the current study was to examine why individuals recall certain information about a particular event. The main goal of the study was to determine if demographics and life experiences play a role in what could be recalled about a particular event. Seven hypotheses were formulated: 1) those who grew up in an urban area will have better recall of a video recorded event than those who grew up in a rural area; 2) subjects who grew up with siblings will be more likely to recall information from a video recorded event than those who grew up as an only child; 3) those who are employed will recall more details from a video recorded event than those that are not employed; 4) those respondents who are older will recall more information from a video recorded event than younger respondents; 5) those respondents who have children of their own will recall more details of verbal conversations in a video recorded event than those who have no children; 6) male respondents will recall more visual details of a video recorded event, whereas females will recall more verbal details in the video; and, 7) those respondents who are social or behavioral science majors will recall more details about people and activities in a video recorded event than those who are natural science majors.

In order to test these hypotheses, a video recording was made of a family engaged in normal activities in a living room. The video was shown to undergraduate and graduate college students. The respondents answered questions regarding details they remembered in the video. There were four details that were categorized from the

videotaped event. These details were: details regarding the room the video took place in; details regarding the activities the participants in the video were participating in; details regarding the people's description in the video; and, details regarding the verbal communications in the video.

Also of interest was the extent to which respondents would make assumptions regarding the relationships of the people that were not detailed in the video. There were a few questions on the questionnaire that asked if the man and woman were married, if the children belonged to them, and so on. The answers to these questions were not found from watching the video recording. If the respondent answered "do not know" on the questionnaire, it was counted as a correct answer.

### *Conclusions*

Significant differences were found with each of the seven hypotheses under examination. However, the results were mixed based on the particular details (room, activity, people, and verbal) and the respondent's demographic characteristics.

The first hypothesis assumed that those who grew up in an urban area will have better recall of the video recorded events than those who grew up in a rural area. However, the results were mixed. Those who grew up in an urban area were significantly better at recalling details about activities the people in the video were doing. However, those who grew up in a rural area were better at recalling details about the people themselves in the video. There were no significant differences found with details about the room and verbal communications with urban and rural residents.

The second hypothesis assumed that subjects who grew up with siblings will be more likely to recall more information from the video than those who grew up as an only

child. As predicted, those with siblings were significantly better at recalling details about activities and verbal communications in the video than the only child respondents.

However, respondents who were an only child were better at recalling details about the room in the video.

The third hypothesis assumed that those who were employed would recall more details in the video than those who were not employed. Again, there were mixed results with the significance levels. While those that were employed were significantly better at recalling details about the room in the video, those that were not employed were significantly better at recalling details about activities, people and verbal communications in the video.

The fourth hypothesis assumed that those respondents who were older would recall more details from the video than younger respondents. Again, significance levels were mixed. Older respondents (over 30 years of age) were significantly better at recalling details of verbal communications. Younger respondents were significantly better at recalling details of the room depicted in the video. There were no significant differences found with details about activities and people and age of the respondent.

The fifth hypothesis assumed that those respondents with children would recall details about verbal communications in the video better than those without children. The findings revealed that those respondents with children were significantly better at recalling not only verbal communications in the video but also details about activities and people in the video. Respondents without children were significantly better at recalling details about the room description in the video.

The sixth hypothesis assumed that those respondents who were male would recall more visual details of the video (room details) than female respondents. This hypothesis was supported, as males were significantly better than females in recalling details about the room in the video. However, females were significantly better than males in recalling details about activities, people and verbal communications in the video. Males were more likely to pay attention to details in which participants in the video were being active and moving about. Females were more likely to pay attention to more subtle activities in the video and verbal communications.

The seventh hypothesis assumed that those respondents who were social or behavioral science majors would recall details regarding people and activities in the video better than respondents who were natural science majors. This hypothesis was supported. Those who were social and behavioral science majors were significantly better at recalling details about people and activities than natural science majors. However, predictably, natural science majors were better at recalling visual details of the room in the video.

Respondents who were female, unemployed, married, had a child of their own, grew up with siblings, and were social or behavioral science majors were significantly more likely to make erroneous assumptions regarding the relationships of the participants in the video. This indicates that some people will interject their own perceptions or opinions in recalling events that are not supported by the observation of the event.

### *Implications*

The current study used undergraduate and graduate students from East Tennessee State University. Although the sample might have been representative of the population of East Tennessee, the sample may not be representative of the population at large. The majority of the sample was undergraduate student under the age of 30. This was a limitation in that a firm conclusion cannot be made about older respondents being able to recall more details about the video due to having more life experiences. Future research should include equal numbers of older and younger respondents in the study to draw firm conclusions about age differences in eyewitness testimony.

Furthermore, the sample consisted of all volunteers who may not have taken the study seriously. Respondents may have just breezed through the questionnaire and not answered the questions to the best of their ability. On a few occasions, participants were observed making obvious facial expressions of disinterest. These limitations may never be overcome, but this is an observable limitation of the study and something that needs to be considered in future studies.

Another limitation is that the study was conducted in several different locations. Each location was set-up the same, but respondents were able to sit where they wanted. Therefore, depending on the location of each respondent, one may not have been able to see and hear the video equally as well as another respondent. Seating arrangements may be something that need to be considered for future studies of this nature.

The video is of a noncriminal event. Would the results have been different if the event was of a criminal nature? Future studies could examine the differences in viewing a noncriminal event versus a criminal event.

To further study the relationship between demographics and life experiences and eyewitness testimony and memory, more research should address overall memory and life experiences. There is not enough literature on how life experiences can affect an individual's memory. An individual might be able to remember an event better because of how he or she was raised or due to something that happened in his or her life. This information would add to the body of knowledge of eyewitness testimony.

This study adds to questions previous studies have raised on the effectiveness of eyewitness testimony as an acceptable way of convicting suspects. Also, the study shows that demographics and life experiences can help or hinder someone's memory of an event which in turn could affect his or her testimony. For instance, when men and women witness an event the men recall more visual details, whereas the women recall more activity, people, and verbal details as indicated in the results. Therefore, women observe one aspect of the event while the men observe another aspect. Each eyewitness's testimony is incomplete because a different part of the event was remembered. As a result, in any eyewitness testimony situation, events could be related differently based on gender.

The results of this research indicate that demographics and personal life experiences may be a source of eyewitness testimony inaccuracies. As this research has shown, eyewitness testimonies are still potentially unreliable no matter what variables are involved. Studies of this type attempt to improve conditions for the criminal justice system but mostly for defendants. As there are many cases where defendants have served time for crimes they did not commit, research on eyewitness testimony should continue.

Research on eyewitness testimony and memory will continue to accumulate. Eyewitness testimonies could be valuable but not when used alone. More research should be done in this area to establish widely accepted valid and reliable guidelines for using eyewitness testimony. If such information is available then perhaps eyewitness testimonies could be relied upon to a greater extent.

## REFERENCES

- Abate, F. (1998). *The Oxford American Desk Dictionary*. New York: Oxford University Press.
- Brewer, N., Potter R., Fisher R.P., Bond N., & Luszcz, M.A. (1999). Beliefs and data on the relationship between consistency and accuracy of eyewitness testimony. *Applied Cognitive Psychology, 13*, 297-313.
- Brigham, J.C., & Barkowitz, P. (1978). Do "They all look alike?" The effect of race, sex, experience, and attitudes on the ability to recognize faces. *Journal of Applied Social Psychology, 8*, 306-318.
- Brigham, J.C., & Malpass, R.S. (1985). The role of experience and contact in the recognition of faces of own and other race person. *Journal of Social Issues, 41*, 139-155.
- Christianson, S. (1992). Emotional stress and eyewitness memory: A critical review. *Psychological Bulletin, 112*, 284-309.
- Christianson, S., & Hubinette, B. (1992). Hands up! A study of witnesses' emotional reactions and memories associated with bank robberies. *Applied Cognitive Psychology, 7*, 365-379.
- Clark McMillan. *Innocence Project*. Retrieved February 19, 2009, from <http://www.innocenceproject.org/Content/214.php>
- Clifford, B.R., & Scott, J. (1978). Individual and situational factors in eyewitness testimony. *Journal of Applied Psychology, 63*, 352-359.
- Cohen, R.L., & Harnick, M.A. (1980). The susceptibility of child witnesses to suggestion. *Law and Human Behavior, 4*, 201-210.
- Coxon, P., & Valentine, T. (1997). The effects of age of eyewitnesses on the accuracy and suggestibility of their testimony. *Applied Cognitive Psychology, 11*, 415-430.
- Egeth, H.E. (1993). What do we not know about eyewitness identification? *American Psychologist, 48*, 577-580.
- Groome, D., et al. (1999). *An introduction to cognitive psychology: Processes and disorders*. New York: Psychology Press.
- Gudjonsson, G.H. (1984). A new scale of interrogative suggestibility. *Personality and Individual Differences, 5*, 303-314.

- Haber, R. N., & Haber, L. (2000). Experiencing, remembering and reporting events. *Psychology, Public Policy, and Law*, 6, 1057-1097.
- Heath, W. P., & Erickson, J.R.. (1998). Memory for central and peripheral actions and props after varied post-event presentation. *Legal and Criminological Psychology*, 3, 321-346.
- Hunt, R. R., & Ellis, H.C. (1999). *Fundamentals of cognitive psychology*. San Francisco: McGraw-Hill.
- Kassin, S. M., Tubb, V.A., Hosch, H.M., & Memon, A. (2001). On the 'general acceptance' of eyewitness testimony research. *American Psychologist*, 56, 405-416.
- Leippe, M.R., Wells, G.L., & Ostrom, T.M. (1978). Crime seriousness as a determinant of accuracy in eyewitness identification. *Journal of Applied Psychology*, 63, 345-351.
- Lipton, J.P. (1977). On the psychology of eyewitness testimony. *Journal of Applied Psychology*, 62(1), 90-95.
- List, J.A. (1986). Age and schematic differences in the reliability of eyewitness testimony. *Developmental Psychology*, 22(1), 50-57.
- Loftus, E.F. (1975). Leading questions and the eyewitness report. *Cognitive Psychology*, 7, 560-572.
- Loftus, E.F. (1991). The glitter of everyday memory...and the gold. *American Psychologist*, 46, 16-18.
- Loftus, E.F., & Hoffman, H.G. (1989). Misinformation and memory: The creation of new memories. *Journal of Experimental Psychology: General*, 118, 100-104.
- Loftus, E.F., & Loftus, G. (1980). On the performance of stored information in the human brain. *American Psychologist*, 35, 409-420.
- Loftus, E.F., Loftus, G.R., & Messo, J. (1987). Some facts about "weapon focus." *Law and Human Behavior*, 11, 55-62.
- 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*, 18, 585-589.
- Miguelles, M., & Garcia-Bajos, E. (1999). Recall, recognition, and confidence patterns in eyewitness testimony. *Applied Cognitive Psychology*, 13, 257-268.

- Miller, G.A. (1956). The magical number seven, plus or minus two: Some limits on our capacity for processing information. *Psychology Review*, 63, 81-97.
- Miller, Z. (2006, October 14). *The Accuracy of Eye Witness Testimony and Its Flaws*. Retrieved February 19, 2009, from <http://ezinearticles.com/?The-Accuracy-of-Eye-Witness-Testimony-and-Its-Flaws&id=328261>
- Myers, D. G. (1999). *Social psychology* (6<sup>th</sup> ed.). New York: McGraw-Hill.
- Myers, D. G. (2004). *Psychology*. New York: Worth Publishers.
- Naka, M., Itsukushima, Y., & Itoh, Y. (1996). Eyewitness testimony after three months: A field study on memory for an incident in everyday life. *Japanese Psychology Research*, 38, 14-24.
- Powers, P.A., Andriks, J.L., & Loftus, E.F. (1979). Eyewitness accounts of females and males. *Journal of Applied Psychology*, 64(3), 339-347.
- Read, J.D., Vokey, J.R., & Hammersley, R. (1990). Changing photos of faces: Effects of exposure, duration and photo similarity on recognition and the accuracy-confidence relationship. *Journal of Experimental Psychology: Learned Memory and Cognition*, 16, 870-882.
- Roper, R., & Shewan, D. (2002). Compliance and eyewitness testimony: Do eyewitnesses comply with misleading 'expert pressure' during investigative interviewing? *Legal and Criminological Psychology*, 7, 155-163.
- Ronald Cotton. *Innocence Project*. Retrieved February 19, 2009, from <http://www.innocenceproject.org/Content/72.php>
- Shaw, J., & Skolnick, P. (1999). Weapon focus and gender differences in eyewitness accuracy: Arousal versus salience. *Journal of Applied Social Psychology*, 29, 328-341.
- Sperling, G. (1960). The information available in brief visual presentations. *Psychological Monographs: General and Applied*, 74(11), 1-30.
- Wagstaff, G.F., Macveigh, J., Boston, R., Scott, L., Brunas-Wagstaff, J., & Cole, J. (2003). Can laboratory findings on eyewitness testimony be generalized to the real world? An archival analysis of the influence of violence, weapon presence, and age on eyewitness accuracy. *The Journal of Psychology*, 137(1), 17-28.
- Wells, G. L., & Bradfield, A.L. (1998). "Good, you identified the suspect." Feedback to eyewitnesses distorts their reports of the witnessing experience. *Journal of Applied Psychology*, 83, 360-376.

- Wells, G.L., & Olson, E.A. (2003). Eyewitness testimony. *Annual Reviews of Psychology, 54*, 277-295.
- Wells, G.L., Small, M., Penrod, S., Malpass, R.S., Fulero, S.M., & Brimacombe, C.A.E. (1998). Eyewitness identification procedures: Recommendations for lineups and photospreads. *Law and Human Behavior, 22*, 602-613.
- Wright, D. B. (2000). Memory Conformity: Exploring Misinformation Effects When Presented By Another Person. *British Journal of Psychology, 91*, 189-203.
- Wright, D. B., Loftus, E.F., & Hall, M. (2001). Now you see it; now you don't: Inhibiting recall and recognition of scenes. *Applied Cognitive Psychology, 15*, 471-482.
- Yarmey, A.D., & Kent, J. (1980). Eyewitness identification by elderly and young adults. *Law and Human Behavior, 4*, 359-371.

APPENDICES

APPENDIX A

*Video for Eyewitness Recall of a Non Criminal Event*



[Video for Eyewitness Recall of a Non-Criminal Event](#)

APPENDIX B

*Questionnaire*

**Please answer the following by checking or filling in the blank.**

Sex: M\_\_\_\_ F\_\_\_\_ Age: \_\_\_\_\_

Current job (if applicable): \_\_\_\_\_

Marital Status: Single \_\_\_\_  
Married \_\_\_\_  
Separated \_\_\_\_  
Divorced \_\_\_\_  
Widowed \_\_\_\_

Number of children you have (if applicable): \_\_\_\_\_

As a high school student, were you primarily educated in:

\_\_\_\_Public School  
\_\_\_\_Private School  
\_\_\_\_Home School

Growing up did you reside in:

A Rural Area \_\_\_\_  
An Urban Area \_\_\_\_

Growing up how many siblings were in your home while growing up: \_\_\_\_\_

Class: Freshman_____	GPA: 0.0-1.0 ____
Sophomore____	1.1-2.0 ____
Junior_____	2.1-3.0 ____
Senior_____	3.1-4.0 ____
Graduate_____	

Major: \_\_\_\_\_

**When answering the following questions please circle the correct answer clearly. Once you have answered a question please do not go back and change that answer. Please answer the questions in the order in which they are presented. Thanks for your help in my research.**

1. Who did you pay the most attention to when you were watching the video?  
A. Adult female                      B. Adult male  
C. Male child                          D. Female child  
E. Baby                                  F. Don't know
  
2. What event do you particularly remember in the video?  
  

---
3. What color was the couch?  
A. Blue                                  B. Purple  
C. Red                                  D. Yellow  
E. Don't know
4. How many doorways were shown in the video?  
A. 1                                      B. 4  
C. 3                                      D. 2  
E. Don't know
5. How many paintings were hanging on the wall?  
A. 2                                      B. 1  
C. 0                                      D. 3  
E. Don't know
6. What type of landscape was on the closest picture?  
A. Mountains                          B. Ocean  
C. Village                              D. Snow Scenery  
E. Don't know
7. What color were the walls?  
A. Gray                                  B. Tan  
C. Black                                D. Red  
E. Don't know
8. How could you best describe the lighting in the room?  
A. Poorly lit                            B. Well lit  
C. No lighting                          D. Bright  
E. Don't know
9. How would you describe the floor?  
A. Rug                                    B. Carpet  
C. Hardwood flooring                D. Tile  
E. Don't know
10. What was the object in the bottom right hand corner of the screen made out of?  
A. Steel                                  B. Glass  
C. Plastic                                D. Wood  
E. Don't know

11. Who would use the items on the far right side of the room?  
A. Painter, Artist                      B. Carpenter  
C. Plumber                                D. Lawyer  
E. Don't know
12. Were there any lamps that were not turned on?  
A. Yes                                        B. No  
C. Don't know
13. Where was the fireplace located?  
A. Left wall                                B. Right wall  
C. Back wall                               D. Not applicable  
E. Don't know
14. What was the name of the adult female?  
A. Beth                                      B. Ashley  
C. Christy                                 D. Donna  
E. Don't know
15. What was the name of the adult male?  
A. Fred                                      B. Howie  
C. Kevin                                    D. Richard  
E. Don't know
16. What was the name of the female child?  
A. Katie                                     B. Sophie  
C. Caroline                                D. Shelby  
E. Don't know
17. What was the name of the male child?  
A. Matt                                      B. Ben  
C. Xavier                                  D. William  
E. Don't know
18. What was the name of the baby?  
A. Abigail                                 B. Ruby  
C. Jenn                                      D. Renee  
E. Don't know
19. Who was reading a book at the beginning of the video?  
A. Female child                          B. Male child  
C. Adult male                             D. Adult female  
E. Don't know
20. What was the name of the book?  
A. Moby Dick                              B. My Side of the Mountain  
C. Dreamcatcher                        D. Driver #8  
E. Don't know
21. Was the book being read for class?  
A. Yes                                        B. No  
C. Don't know

22. At the beginning of the movie in what order was everyone sitting on the couch (going from your left to right)?
- Male child, adult male-baby in lap, adult female and female child.
  - Female child, adult female-baby in lap, adult male and male child.
  - Adult female, adult male-baby in lap, male child, and female child.
  - Male child, adult female-baby in lap, adult male and female child.
  - Don't know
23. Who spoke first?
- Adult male
  - Adult female
  - Female child
  - Male child
  - Don't know
24. What did the adult male remind the adult female she needed to do?
- Make a doctor's appointment for the twins.
  - Buy tickets to the zoo.
  - Make a doctor's appointment for the male child.
  - Call her mother.
  - Don't know
25. When does the adult female say that she will take care of the reminder?
- This week
  - Next week
  - Tonight
  - Tomorrow
  - Don't know
26. What does the adult male ask the female child if she wants to do?
- Thumb wrestle
  - Play Go Fish
  - Play Old Maid
  - Not applicable
  - Don't know
27. What does the adult female ask the adult male to get while he is up?
- A glass of water
  - Pictures
  - Markers
  - Mail
  - Don't know
28. Why does the adult male get off the couch?
- To get a drink
  - To get playing cards
  - To get chewing gum
  - Not applicable
  - Don't know
29. What and where were the pictures from?
- Christmas this year at Maryland
  - Christmas last year at Maryland
  - Christmas at the zoo
  - Christmas two years ago
  - Don't know
30. What does the adult male ask the female child if she can do?
- Shuffle
  - Burp
  - Blow a bubble
  - Bark like a dog
  - Don't know
31. Does the female child know how to shuffle?
- Yes
  - No
  - Don't know

32. What does the adult male say after the female child shuffles?  
 A. Ta-da, good job                      B. You did it  
 C. I knew you could do it      D. Better luck next time  
 E. Don't know
33. How many cards does the female child say you deal for go fish?  
 A. 5    B. 6  
 C. 7    D. 8  
 E. Don't know
34. What kind of Christmas did they have in Maryland?  
 A. Rainy                                        B. White  
 C. Sunny                                        D. Cloudy  
 E. Don't know
35. Where did the children stay for Christmas?  
 A. Here                                         B. There  
 C. Maryland                                 D. Not applicable  
 E. Don't know
36. Did it snow where the children were for Christmas?  
 A. No     B. Yes  
 C. Don't know
37. What outfits did the adult female say the twins were in when she was talking about the pictures?  
 A. Halloween                                B. Santa  
 C. Matching                                 D. Soccer  
 E. Don't know
38. Where was the adult male and female at in Maryland?  
 A. The adult female's parents' house  
 B. The adult male's parents house  
 C. An old friend's house  
 D. Grandparent's house  
 E. Don't know
39. The male child asked the adult female what type of building it was in the picture and she said that it was a:  
 A. House                                        B. Apartment  
 C. Condo                                        D. Town-house  
 E. Don't know
40. What was the size of the house?  
 A. Small                                         B. Big  
 C. Medium                                     D. Not applicable  
 E. Don't know
41. Did the house have a big yard?  
 A. Yes    B. No  
 C. Don't know

42. The adult female also showed other pictures that they took when they got back.  
What were those pictures of?  
A. Zoo  
B. Beach  
C. Sea World  
D. Yosemite National Park  
E. Don't know
43. How long did they spend at the zoo?  
A. 2 hours  
B. All day  
C. 4 hours  
D. half a day  
E. Don't know
44. The adult female said a trip to the zoo is:  
A. Annoying  
B. Tiring  
C. Exciting  
D. Terrific  
E. Don't know
45. What animal did the adult female mention first?  
A. Elephant  
B. Snake  
C. Giraffe  
D. Panda Bear  
E. Don't know
46. Who fed the giraffe?  
A. Adult male  
B. Adult female  
C. Male child  
D. Female child  
E. Don't know
47. Who asked the male child if he liked giraffes?  
A. Adult male  
B. Adult female  
C. Female child  
D. Baby  
E. Don't know
48. Did the male child like giraffes?  
A. Yes  
B. No  
C. Don't know
49. When they went to the snake house what type of snake did they see?  
A. Cobra  
B. Gardner  
C. Boa  
D. Rattle  
E. Don't know
50. How big was the snake?  
A. 15 in.  
B. 15 ft.  
C. 24 in.  
D. 25 ft.  
E. Don't know
51. Where was the snake from?  
A. Africa  
B. Asia  
C. India  
D. China  
E. Don't know
52. Who went first in the game of go fish?  
A. Adult male  
B. Adult female  
C. Male child  
D. Female child  
E. Don't know



65. Who do the twins belong to?  
A. Adult male and female    B. Friends of the adult male and female  
C. They are adopted        D. There are no twins  
E. Don't know
66. How many times does the baby cry out?  
A. 2                                B. 3  
C. 4                                D. 5  
E. Don't know
67. How many people are wearing glasses in the video?  
A. 1                                B. 2  
C. 3                                D. 4  
E. Don't know
68. What is the female child wearing in the video?  
A. Pants                          B. Overalls  
C. Dress                          D. Shorts  
E. Don't know
69. What color is the baby wearing?  
A. Blue                            B. Yellow  
C. Red                             D. Green  
E. Don't know
70. What footwear was the female child wearing?  
A. Sneakers                      B. Sandals  
C. Boots                          D. Not applicable  
E. Don't know

## VITA

### JESSICA VANEATON

Personal Data: Date of Birth: December 14, 1980  
Place of Birth: Greenville, California  
Marital Status: Married

Education: Cherokee Elementary School, Johnson City, Tennessee  
Liberty Bell Middle School, Johnson City, Tennessee  
Science Hill High School 1999, Johnson City, Tennessee  
B.S. Criminal Justice and Psychology 2003, Lees McRae  
College, Banner Elk, North Carolina  
M.A. Criminal Justice and Criminology 2009, East  
Tennessee State University, Johnson City,  
Tennessee

Professional Experience: DUI Coordinator, First Judicial District Attorney General's  
Office, Washington County, Tennessee

Honors and Awards: TIES Query Certification  
Outstanding Criminal Justice Student Award 2003, Lees  
McRae College  
Who's Who Among American Colleges and Universities  
2003  
4-year letterman in Women's Soccer, Lees McRae College  
MVP (Most Valuable Player) Women's Soccer 2002, Lees  
McRae College  
1-year letterman in Women's Lacrosse, Lees McRae College  
Coach's Award Women's Lacrosse 2003, Lees McRae  
College  
Miss LMC 2002, Lees McRae College