Preserving the right to a fair trial an examination of the prejudicial value of visual and auditory evidence in the context of a criminal case

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PRESERVING THE RIGHT TO A FAIR TRIAL: AN EXAMINATION OF THE PREJUDICIAL VALUE OF VISUAL AND AUDITORY EVIDENCE IN THE CONTEXT OF A CRIMINAL CASE

by

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ABSTRACT

Federal Rule of Evidence 403 requires evidence's probative value to substantially outweigh its prejudicial value for the evidence to be admitted. To date, courts have opinioned that photographic evidence holds low prejudicial impact and rarely render court proceedings unfair (*Futch v. Dugger*, 1989). The present study sought to empirically investigate this issue. In a 2 (Auditory Present/Auditory Absent) x 3 (Graphic Photo/Neutral Photo/No Photo) factorial design, 300 participants reviewed case materials from a recent murder case and provided information concerning their verdict decision. Emotional state data was also collected prior to and following review of the case materials via the Positive and Negative Affect Schedule – Expanded Form (PANAS-X; Watson & Clark, 1994). Participants reviewing graphic photos coupled with their case materials experienced significantly greater increases in both sadness and surpise than those reviewing neutral or no photos. Participants who had an auditory recording present with their case materials experienced greater increases in both joviality and, to a lesser extent, hostility. Participants reviewing the auditory recording also reported being significantly less able to formulate their verdict decisions fairly or impartially. When heightened emotion is involved in decision making, cognitive resources for well-informed decisions are limited (Greene & Haidt, 2002). The current study suggests the potential for particular modes of evidentiary presentation to manipulate jurors' emotions, therefore increasing their prejudicial value. When the probative value of evidence does not outweigh the potentially prejudicial nature of jurors' heightened emotionality, the fairness of court proceedings may be questioned and issues of the defendant's right to a fair trial raised.

DEDICATION

For my family,
both in blood and in spirit,
for pushing me to climb life's mountains

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INTRODUCTION

Famous closing arguments such as those given by the prosecuting attorneys in the O.J. Simpson case (*People of the State of California v. Orenthal James Simpson*, 1995) utilize visual and auditory evidence to assist in swaying the jury toward a desired blame attribution. During closing arguments, prosecuting attorneys in the Simpson case played an auditory recording of Nicole Simpson's 911 call to the police and projected photographs of the victims' bodies on a screen. In the United States and other common law countries, it is assumed particular evidence has the potential to impose a prejudicial influence on jurors' decision making processes (Bright & Goodman, 2006). In fact, emotional reactions to evidence may limit the cognitive resources available to formulate a fully developed, well informed decision (Greene & Haidt, 2002) and weaken the jurors' ability to deliver a verdict based solely on the probative value of the evidence presented (Bright & Goodman, 2006).

Jurors are presented with the task of listening to conflicting evidence and using it in the decision making process in order to eventually arrive at a subjective estimate of guilt (Hastie, 1993; Kerr, 1993; Pennington & Hastie, 1993). This estimate of guilt is then compared to the threshold of reasonable doubt; estimates exceeding the threshold of reasonable doubt are presumed to result in guilty verdicts (Ostrom, Werner, & Saks, 1978).

The United States' Criminal Justice System assumes jurors are able to make decisions entirely devoid of emotions. This assumption is evidenced by pattern jury instructions directing jurors to formulate their verdict decision without allowing their emotions to influence their

decision making process (Salerno & Bottoms, 2009; Committee on Pattern Criminal Jury Instructions District Judges Association Sixth Circuit, 2011). When jurors' decisions are influenced by emotion, a number of core values of the Criminal Justice System, namely the defendant's right to a fair trial, the defendant's right to be considered innocent until proven guilty beyond a reasonable doubt, and the jury's role as "finders of fact" (Bright & Goodman-Delahunty, 2006), are called into question. Common law countries, including the United States and Australia, have imposed safeguards to attempt to shield jurors from evidence which is overly emotional or potentially biasing. For evidence to be admitted, first the court must determine if the evidence is relevant. According to the Federal Rules of Evidence, relevant means "having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence" (FED. R. EVID. 401). Upon confirming relevancy, the court must then determine if the probative value of the evidence outweighs its prejudicial value (FED. R. EVID. 403). In other words, the factual evidence presented must outweigh any negative impact on fairness and impartiality of the proceeding (Douglas, Lyon, & Ogloff, 1997).

Should an attorney believe the opposing counsel is attempting to admit evidence which violates Federal Rule of Evidence 403, they may object. Because this rule encompasses almost any evidence being presented (with the exception of evidence that impeaches a witness with a conviction for a crime of dishonesty, in which Rule 609 mandates admission without balancing probative and prejudicial value), the objection claiming that evidence violates Federal Rule 403 has become the "universal fall back objection" for attorneys looking to exclude items of evidence (Park, 2001). When the objection is made, the trial judge takes into consideration whether an

appropriate substitution can be used which would provide the same probative value without the risk of increased prejudicial value. If a substitution cannot be found, the court may instruct witnesses to avoid inflammatory characterizations or jurors to ignore overly emotional information being presented (Park, 2001). However, cognitive research suggests that the presentation of negative stimuli can severely influence the perception of other facts presented in support of a prevailing mood state and that this influence is unbeknownst to the observer (Douglas, Lyon & Ogloff, 1997; Forgas, 1995).

Many courts generally rule that photographs have low prejudicial value, claiming that photographs only have an influence on verdict if they are "crucial, critical and highly significant in the accused's conviction" and "rarely renders the proceedings fundamentally unfair" (Douglas, Lyon, & Ogloff, 1997; *Futch v. Dugger*, 1989). However, psychology has found evidence to the contrary; photographs have been demonstrated to significantly influence emotions, perception of additional items of evidence presented, verdict decisions, and confidence in those decisions (Bright & Goodman-Delahunty, 2006; Douglas, Lyon & Ogloff, 1997; Oliver & Griffitt, 1976; Whalen & Blanchard, 1982). Such findings suggest that visual evidence should be evaluated in terms of heightened potential prejudicial value.

Partially due to the potentially disturbing nature of photographs presented in violent cases, their prejudicial and probative value is often questioned. Such was the case in *State of Arizona v. Larry Daniel Staatz*, 1988. Larry Daniel Staatz was charged with murder in the first degree and theft of property over $1,000.00. The defendant admitted to the killing, but claimed the act was done in self-defense after the victim made sexual advances toward him. Throughout the course of Staatz's trial, the defense argued that photographs of the victim's partially

decomposed body riddled with stab wounds should not be admitted because these photographs were "inflammatory and unfairly prejudicial to the defendant." The State, on the other hand, argued that the photographs were relevant to the case and presented a detailed illustration of the fatal wounds which could not be conveyed by expert testimony. The State further claimed that the nature and location of the stab wounds were very important facts to the case because the defendant was claiming he killed the victim in self-defense. Because of the context, the probative value was drastically increased leading the photographs to ultimately be admitted for juror review.

When photographs are admitted as evidence in court, it is understood that they provide information unable to be learned through other means (such as expert testimony). The gruesome nature of a photograph alone is not a valid objection; it must also be proven that the prejudicial value of the photographs outweighs the probative value. Furthermore, because the terms "prejudicial" and "probative" are subjective terms, the trial court has a considerable amount of discretion in admitting or excluding photographs. Photographs of a victim, in particular, can be admissible for several reasons including: victim identification, nature and location of fatal injury, illustration of testimony corroboration of the state's theory of how and why the homicide is committed, and/or proof of corpus delicti (corpus delicti refers to the principle that it must be proven that a crime has occurred before a person can be convicted of committing the crime).

BACKGROUND

Physiological studies have examined brain function during the presentation of potentially biasing information. When presented with descriptions involving bodily harm, participants had less activation in the anterior temporal poles. The anterior temporal poles are associated with autobiographical episodic memory (Heekeren et al., 2005), with taking context into account (Fink et al., 1996), and with attributing the intentions of others (Frith & Frith, 2003).

The Influence of Visual Stimuli

In 1989, the 11th Circuit Court of Appeals held that the introduction of photographic evidence rarely renders the proceedings fundamentally unfair (*Futch v. Dugger*, 1989). In cases where photographs were mistakenly admitted, the Courts have held that the accused is only deprived of a fair trial if the photographs were crucial and highly significant in leading to the conviction (Douglas, Lyon, & Ogloff, 1997).

Psychologists have also examined the influence of visual stimuli on mock jurors' emotions and decision makings in both civil and criminal trials. Visual stimuli in the form of slides (Oliver & Griffitt, 1976), photographs (Bright & Goodman-Delahunty, 2006; Douglas, Lyon & Ogloff, 1997; Whalen & Blanchard, 1982), and videotapes (Kassin & Garfield, 1991) have all been examined in the context of their influence on verdict. The results of these studies suggest that the presence of visual stimuli may cause jurors to award higher sums in damages in civil trials (Oliver & Griffitt, 1976), especially when photographs are presented in color and in the presence of other facts such as higher severity of injury (Whalen & Blanchard, 1982). Many of the earlier studies, including those of Oliver and Griffitt, and Whalen and Blanchard, did not

collect affective state data. However, the researchers attributed the mock jurors' harsher decisions to emotional arousal caused by the visual stimuli. Similarly, videotapes depicting the crime have been linked with jurors' lower thresholds of "beyond reasonable doubt" required for conviction (Kassin & Garfield, 1991). When jurors are formulating their decisions (be they in criminal or civil cases), the level of doubt they have in their decision is compared to their interpretation of "reasonable doubt" in order to arrive at an ultimate verdict decision. Therefore, lower thresholds of "beyond reasonable doubt" allow jurors to increase the amount of doubt they consider reasonable, thus arriving at a guilty verdict more readily.

While the earlier studies did not collect affective state data, additional studies have. Bright and Goodman-Delahunty (2006) and Douglas, Lyon and Ogloff (1997) found that jurors presented with visual stimuli in the form of photographs were more likely to convict the defendant and to report higher levels of emotional distress than control groups. The emotional influence of the photographs may act as a mediating variable in the formulation of verdict decisions (Bright & Goodman-Delahunty, 2006). It is important to note that participants in all groups (those viewing photographs and those in the control group) reported that they were able to act fairly and impartially when formulating their decisions; those who were presented with photographs reported that the presence of the photographs had little influence on their verdict (Douglas, Lyon & Ogloff, 1997). However, the results of these studies suggest that though jurors are instructed to correct or compensate for any biases incurred throughout the review of case materials, this bias goes unnoticed. Jurors do not recognize that they have heightened emotionality. Therefore, they are unable to compensate in their decision making.

Moreover, many studies examining the influence of visual stimuli on the perception of additional pieces of evidence suggest that the presence of visual stimuli in the form of photographs or slides increases the inculpatory value placed on additional items of evidence presented subsequently (Bright & Goodman-Delahunty, 2006; Douglas, Lyon & Ogloff, 1997; Oliver & Griffitt, 1976; Whalen & Blanchard, 1982). In other words, when visual evidence is present, jurors may be more likely to view additional pieces of evidence as supporting a guilty verdict than jurors not presented with visual evidence.

The Influence of Gruesome Verbiage

Not just visual stimuli have been found to influence jury decision making. Gruesome verbiage has also been found to have an influence (Bright & Goodman-Delahunty, 2004). When gruesome verbiage ("the defendant forcefully thrust the knife into the chest of his victim" instead of "the defendant stabbed the victim") is used, mock jurors tend to place higher inculpatory value on other pieces of evidence, to report higher estimates of guilt, and to have higher conviction rates. The vivid nature of the gruesome facts presented may focus jurors on the gruesome evidence more than any inculpatory or exculpatory facts. When presented with gruesome evidence, mock jurors may have relied on their affective states to formulate their decisions.

An example of dispute over the potentially prejudicial nature of verbiage occurred in *State of New Hampshire v. Brandon Yates* (2005), eighteen year old Brandon Yates provided vodka to a group of juvenile friends. One of the adolescent girls became intoxicated and incapacitated. She was left with the defendant in the woods while her friend went to find help.

The friend's parents found the girl, undressed and unconscious, left in the woods in sub-freezing temperatures. It was estimated that approximately 54 minutes had elapsed between the time the friend left the girl in the woods and the friend's mother dialed 911. The mother reported to the operator that a "little girl" appeared to be "sexually abused." The operator asked if "the attacker" was still present and repeated the caller's opinion that the victim was sexually abused. The victim was taken to the hospital where it was reported that she had fresh injuries to her genital area. Brandon Yates, the defendant, admitted to having sex with the victim. Throughout Brandon Yates' case, the defense argued against having the 911 recording admitted as evidence because of its minimal probative value compared to its prejudicial value. The potentially prejudicial influence of the 911 recording stemmed from the verbiage used throughout the conversation ("little girl," "sexually abused," "attacker," etc.). It was argued that these terms biased the jury against the defendant by providing criminal characterizations and opinions of him. However, the State was able to have the recording successfully admitted as evidence on the basis that the caller was "not highly emotional," was "neither screaming nor crying," and was able to answer the operator's questions in a "calm and coherent manner." To limit the prejudicial value of the recording on jurors, the court provided them with limiting instructions.

The Influence of Auditory Stimuli

The Brandon Yates case also demonstrates the use of auditory evidence and its potential impact on the jury. Research on the influence of auditory evidence on jurors is somewhat limited. Lange, Thomas, Dana and Dawes (2010), examined if the context of the recording had an influence on jurors' perceptions. Participants were told that the low quality recordings were

"criminal suspects' interviews," "job candidates' interviews" or were provided with no context. Those who were told that they were listening to the auditory recordings of "criminal suspects' interviews" were significantly more likely to infer incriminating evidence from the recordings than participants in the other two groups. Lange and his colleagues (2010) also examined the influence on mock jurors of a transcript containing inaccurate wording that was *not* actually on the recording. In this study, the presence of false transcripts containing wording that really was not on the actual recording caused participants to "hear" information as depicted on the transcript instead of as it was actually stated on the recording. For instance, participants "heard," "*I got scared when I saw what I'd done to him*," instead of what was actually stated in the recording, "*I got scared when I saw what it'd done to him*."

The Influence of Emotions

Although jury instructions are based on the assumption that, especially when told to do so, jurors are able to formulate decisions without the influence of any bias or emotions (Committee on Pattern Criminal Jury Instructions District Judges Association Sixth Circuit, 2011), extensive research conducted on the role of emotions on decisions suggests emotion plays a crucial and inevitable role in the decision making process (Greene & Haidt, 2002; Salerno & Bottoms, 2009). Numerous studies investigating the influence of gruesome or otherwise emotionally arousing evidence on juror decision making suggest emotion may act as a mediating variable when finalizing the decision of whether to convict (Bright & Goodman-Delahunty, 2006; Douglas, Lyon, & Ogloff, 1997). Research examining brain activity suggests that when a person engages in the process of making moral judgments, they experience increased activation

in emotional areas of the brain such as the orbitofrontal cortex and temporal poles, and less activation in cognitive areas such as the angular gyrus and superior frontal gyrus (Salerno & Bottoms, 2009).

Cognitive psychology suggests that each emotion carries with it a specific cognitive composition. Experiencing a particular emotion allows an associated cognitive composition to be easily available and employed throughout the decision making process (Bower, 1981; Feigenson & Park, 2006). For instance, anger is often associated with a feeling of certainty (Lerner & Tiedens, 2006; Ortony, Clore, & Collins, 1988), shallower cognitive processing (Lerner & Tiedens, 2006), and attribution of blame (Keltner, Ellsworth, & Edwards, 1993; Lerner, Goldberg, & Tetlock, 1998). Disgust is associated with high levels of certainty, strong unwillingness to attend to the situation, and the feeling that another had control over the situation (Smith & Ellsworth, 1985).

When emotions and moods are involved in decision making, less effortful cognition occurs (Greene & Haidt, 2002), and moods directly influence judgments and decisions by providing a shortcut for the observer or judge to deduce their reactions to a target or situation (Clore, Schwarz, & Conway, 1994; Niedenthal, 1990; Schwarz, et al., 1991; Schwarz & Clore, 1983, 1988, 2003). This deduction does not require a conscious connection between the feelings and the target. Typically, anything that comes to mind tends to be interpreted as connected to the situation (Schwarz & Clore, 2003). This view of emotion suggests emotionally arousing evidence may cause jurors to formulate their decisions based on an emotion-driven explanation, the prejudicial value of the evidence presented, rather than on the facts offered by the evidence, the probative value. Yet the jurors do not recognize the bias.

The Attribution of Blame

According to the Culpable Control Model proposed by Alicke (2000), the attribution of blame is directly influenced by and predominantly based on emotional reactions to situations. The model suggests when people are presented with negative stimuli (as is likely to be presented throughout criminal cases), they formulate negative spontaneous evaluations. The observer then views the evidence in a biased manner, lowers their standards of blame, and/or engages in a biased information search to support their evaluations. This biased and altered perception leads the observer to attribute blame to the person who produces the most negative affect. In support of this theory, a recent study presented mock jurors with case materials involving an accident victim. The only difference between evidence presented to the groups was the intensity of the injury. When the injuries to the victim were more severe, decision makers attributed higher levels of blame and responsibility to the person believed to have caused the accident (Robbennolt, 2000).

As the Culpable Control Model suggests, predispositions caused by the presentation of negative stimuli influence observers' perception of other facts or items presented, biasing them in support of a prevailing mood state or desired blame attribution (Alicke, 2000; Bodenhausen, Sheppard, & Kramer, 1994; Bright & Goodman-Delahunty, 2006). Unfortunately, it is common for this predisposition to influence their perceptions, which are already biased by nature (Plous, 1993, p. 21), even without their knowing (Douglas, Lyon & Ogloff, 1997; Forgas, 1995). Thus, when judges instruct jurors not to allow their biases to influence their decisions, jurors are unaware of the biases and therefore unable to correct for them.

Mood state can influence the details people focus on, constrict which information is easily recalled, and sway how ambiguous stimuli is perceived (Bower, 1981; Forgas & Bower; 1987; Petty, Fabrigar, & Wegener, 2003). In a study conducted by Forgas and Bower (1987), participants spent longer reading over details of a character description when the description was consistent rather than inconsistent with their mood. Additional time spent reading a particular portion of the manuscript suggested increased attention to the correlating details of the character description. In another study, when presented with a narrative, participants paid more attention to and better recalled information congruent with their present mood state (Bower, 1981). When presented with ambiguous stimuli, observers are more likely to interpret or judge the stimuli in concordance with their present mood state or assumed judgmental outcome (Bodenhausen, Sheppard, Kramer, 1994; Bower, 1981; Petty, Fabrigar, & Wegener, 2003).

Reasonable Doubt and Confidence

When jurors decide to convict, it is assumed that they have done so because the evidence has led them "beyond a reasonable doubt." A feeling of certainty has been found to be associated with a number of emotions including anger, disgust, and happiness whereas uncertainty has commonly been associated with hope, anxiety, and sadness (Ortony, Clore, & Collins, 1988; Smith & Ellsworth, 1985). The feeling of certainty makes it less likely for the person to employ complex processing strategies as would be expected when deciding the fate of a person's life. The feeling of certainty causes the person to believe they already know all necessary information required to make a correct decision or judgment (Feigenson & Park, 2006; Feigenson, 2009) and promotes shallow cognitive processing. The person considers fewer

factors (Lerner & Tiedens, 2006), relies on heuristic cues, and tends to agree with those labeled as experts when processing information and formulating decisions (Bodenhausen, Sheppard, & Kramer, 1994).

These studies suggest the presentation of potentially biasing evidence within the courtroom may have a number of influences on the jurors' emotions, and influence their perception of additional items of evidence presented, their verdict decisions, and their confidence in those decisions. These studies also suggest that when this bias is induced, it goes unnoticed, causing the decision maker to believe they are acting fairly or impartially.

HYPOTHESES

The present study investigates the influence of visual evidence, in the form of crime scene photographs, and auditory evidence, in the form of 911 call recordings, on mock jurors' emotions and decisions in a murder trial by measuring fluctuations in emotional state, verdict, confidence, reasonable doubt, and perception of key items of evidence.

Hypothesis 1: Participants presented with both visual and auditory evidence will have the greatest emotional state difference scores. They will be followed by participants presented with only visual or auditory evidence. Participants presented with neither auditory nor visual evidence will have the least emotional state difference scores.

Hypothesis 2: The presentation of auditory or visual evidence will correlate negatively with "threshold of reasonable doubt" ratings.

Hypothesis 3: Guilty verdicts will correlate positively with higher "inculpatory value placed on key items of evidence" and "anger toward the defendant" ratings while correlating negatively with "sympathy/empathy toward the victim" ratings.

Hypothesis 4: "Confidence in verdict" ratings will correlate negatively with "sympathy/empathy toward the victim" ratings and positively with "anger toward the defendant" ratings.

Hypothesis 5: All participants in the study will place high ratings on their ability to act fairly or impartially when formulating their decisions regardless of the set of materials reviewed.

METHOD

Participants

Participants were undergraduate students at the University of Central Florida. Sixty-one participants were not included in the data analysis due to failure to pass the manipulation questionnaire (16.898%). After these participants were removed, 300 participants were included for analysis (N = 300). As prior studies have shown, undergraduate students are a suitable sample of mock jurors when testing initial hypotheses (Rose and Ogloff 2001; Wiener, Krauss, & Lieberman, 2011). However, when testing more complex interactions, a community sample is likely to be more representative because community samples tend to have higher levels of miscomprehension (Wiener, et al., 2004) and have different perceptions of charges, trial procedure, and trial process (Wiener, Krauss, & Lieberman, 2011)

Of the students included in the data analysis, 60.667% (n = 182) were female and 39.333% (n = 118) were male. 79.333% of participants were age 18-20 (n = 238), 13.667% were 21-25 (n = 41), and 6.667% were 26 or older (n = 20, range = 26-50). One participant chose not to disclose their age. Ethnicity ratios closely coincided with national estimates; 66.000% of participants identified themselves as Non-Hispanic White (n = 198), 14.000% as Hispanic (n = 42), 10.333% as African American (n = 31), 8.000% as Asian American (n = 24), and 1.667% as other ethnicities (n = 5). Fifty-five percent of participants reported that they had some college education (in the context of our sample size, these participants were undergraduate sophomores, juniors, and seniors) (n = 165) while 44.7% reported having only completed high school (in the

context of our sample size, these participants were undergraduate freshmen) (n = 134). One participant chose not to disclose their educational background.

All participants provided informed consent and were debriefed upon completion of the study.

Materials

Brief Case Manuscript

The Brief Case Manuscript includes a summary of the Plaintiff's case, a summary of the Defendant's case, and judge instructions to the jury. The case summaries used in this study have been taken verbatim from court records in the case of *State of Ohio v. Widmer* (2009). The Plaintiff's argument used in the Brief Case Manuscript was taken from a memorandum presented by the State of Ohio to the Common Pleas Court on April 22nd, 2009 whereas the Defense's argument was taken from a memorandum presented by the Defendant to the Court of Appeals on August 24th, 2009. These summaries were used verbatim from the documents stated above to ensure validity and authenticity of materials presented. The judge instructions to the jury were modeled after the Pattern Jury Instructions presented by the Sixth Circuit Court, the Circuit Court with jurisdiction over the State of Ohio, to ensure that all necessary components were included in the instructions. The instructions include a description of the role of a juror, general rules of criminal cases, the elements of murder, what information can be considered evidence and thus considered when formulating conviction decisions, and how to evaluate evidence. The Brief Case Manuscript including the judge's instruction to the jury and the Plaintiff's and Defense's arguments can be found in Appendix A.

Auditory Evidence

Auditory evidence presented to participants consisted of a recording of the 911 call placed by the defendant, Ryan Widmer, to the dispatcher, which was included as evidence in *State of Ohio v. Ryan Widmer* (2009). The recording was not edited for time or content with the exception of censoring the phone number from which the defendant called.

Visual Evidence

Visual evidence used in the current study involved screen stills obtained from an online video series devoted to the case (Dateline NBC, The Mystery in the Master Bedroom). A pilot study was conducted to differentiate between graphic and neutral photographs. In a pilot study, participants were presented with twenty images (nineteen from the case in question and one from outside the case which depicted similar injuries) and asked to rate each image on a scale of one to five (one being *Not at All* and five being *Extremely*) for the following modifiers: gruesome, upsetting, disgusting, mundane, and ordinary. The method for the pilot study was adopted from a study conducted by Bright and Goodman-Delahunty (2006) in which participants were asked to rate each image using a Likert scale of one to five ranging from *Not at All* to *Extremely* for the following modifiers: gruesome, upsetting, and disgusting. To ensure a more valid representation of the participants' reactions to the images, this method was expanded with the addition of two reverse scored items - mundane and ordinary. Both the order of presentation of images and the order of the modifiers for each image were randomized. Means for each image were calculated. The four images with the highest means (range = 3.00-3.90) comprised the "Graphic Photos" group, whereas the four images with the lowest means (range = 1.30-1.47) made up the "Neutral

Photos" group. The photograph rating form used in the pilot study can be found in Appendix C-1. The data can be found in Appendix C-2.

In the current study, when participants in the "Graphic Photos" and "Neutral Photos" groups were presented with the images, they were also provided with a brief description of each image in relation to the case. The photographs with the descriptions used in the "Graphic Photos" group can be found in Appendix C-3. The photographs and descriptions included in the "Neutral Photos" group can be found in Appendix C-4.

The Positive and Negative Affect Schedule – Expanded Form (PANAS-X)

At two points throughout the study, participants were asked to complete the Positive and Negative Affect Schedule – Expanded Form (PANAS-X; Watson & Clark, 1994), a self-report emotional state assessment instrument. The PANAS-X, a 60-item questionnaire, utilizes a Likert-style scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). Unlike other emotional state assessments which only measure positive and negative affect, the PANAS-X measures general positive affect, general negative affect, and 11 affect subscales (Fear, Sadness, Guilt, Hostility, Shyness, Fatigue, Surprise, Joviality, Self-Assurance, Attentiveness, and Serenity). Participants rate themselves on items describing different feelings and emotions, such as "hostile," "excited," or "loathing,"). The PANAS-X yields general positive affect, general negative affect, and individual subscale scores. Higher scores indicate higher intensity of mood.

The PANAS-X assessment has better discriminant validity than the POMS (Profile of Mood States), another commonly used emotional state assessment. Whereas the mean correlation among equivalent POMS scales was .60, the mean correlation among the PANAS-X Fear, Hostility, Sadness, and Fatigue scales was significantly lower at .45 ($p < .01$, two tailed).

When follow-up comparisons were computed, only the Fear-Hostility correlation did not differ significantly between subscales. All other individual correlations were significantly lower in the PANAS-X scales than in the corresponding POMS scales. These findings suggest the PANAS-X scales provide "a less redundant, more differentiated assessment of affect" (Watson & Clark, 1994, p. 15). The PANAS-X also has high internal consistency reliability for each of its 11 subscales with median estimates ranging from .72 (Attentiveness) to .93 (Joviality). The subscales with lower reliability scores have relatively fewer items than subscales with higher scores (Watson & Clark, 1994). PANAS-X subscales correlate highly with other commonly used emotional state assessments, such as the POMS (.85 to .91), Beck Depression Inventory (.59), HSCL Anxiety Scale (.74), and the Center for Epidemiological Studies Depression Scale (.75) (Watson & Clark, 1992, 1994). The PANAS-X has also been found to be sensitive to short-term fluctuations in mood or affect.

Juror Response Form

For the purposes of this study, a Juror Response Form was designed. Administered after the participants reviewed the case materials, the Juror Response Form asked them to provide their verdict (guilty/not guilty), confidence in their verdict, the amount of doubt present in their mind, the threshold of reasonable doubt they believe is sufficient to convict, the degree to which key items of evidence were sufficient to convict, their ability to be fair or impartial, their level of sympathy or empathy toward the victim, and their level of anger toward the defendant. With the exception of verdict, all of these items were reported in Likert Scale form ranging from 1 to 8. The Juror Response Form can be found in Appendix E.

Manipulation Check

A Manipulation Check Questionnaire first asked participants about their prior exposure to the case, *State of Ohio v. Ryan Widmer*. It also asked participants about general facts of the case to ensure that they had reviewed the Brief Case Manuscript and any auditory or visual evidence (if applicable) thoroughly. A copy of the Manipulation Check Questionnaire can be found in Appendix F.

Design

The study used a 2 (Auditory Present/Auditory Absent) x 3 (Graphic Photos/Neutral Photos/No Photos) between-subjects factorial design. Participants were randomly assigned to one of the six conditions: Auditory Present and Graphic Photos, Auditory Present and Neutral Photos, Auditory Present and No Photos, Auditory Absent and Graphic Photos, Auditory Absent and Neutral Photos, or Auditory Absent and No Photos.

Procedure

The study was conducted online. To avoid biasing participants' responses, participants were not informed of the precise nature of the study. Instead, they were told the more general purpose of the study "to examine decision making in murder trials." After giving informed consent, participants were randomly assigned to one of the six groups and asked to complete the PANAS-X to provide a baseline measure of their affect. Participants were then presented the case materials coinciding with the group to which they were randomly assigned. The only difference between groups was the presence or absence of auditory and/or visual evidence. All

other factors remained constant. Participants were asked to review the case materials. Case materials included a brief case manuscript, an auditory recording of a 911 call (for groups with auditory present), and photographs (Graphic Photos or Neutral Photos). The case manuscript included a brief summary of the arguments presented by each counsel and brief judge instructions to jury members as previously described.

After review of the case materials, participants provided the following using the Juror Response Form:

- their verdict (guilty/not guilty)
- their level of confidence in their verdict
- the amount of doubt present in their mind
- the threshold of reasonable doubt they believed sufficient to convict
- the degree to which key items of evidence were sufficient to convict
- their assessment of their ability to be fair or impartial
- their level of sympathy or empathy toward the victim
- their level of anger toward the defendant

The PANAS-X was again administered to participants to measure emotional state after reviewing the case and evidence. A Manipulation Check Questionnaire was administered immediately after participants completed the PANAS-X to ensure participants reviewed the case materials carefully and thoroughly. Data from participants providing incorrect responses to more than one question on the manipulation check were not included in the final data set for analysis. Upon completion of the study, participants were presented with a Debriefing Form, informing them in more detail about the nature and purpose of the study.

Simulated jury deliberation was not used in this study because, as research has shown, predeliberation disposition coincides with final verdict decisions in approximately 90% of cases (Sandys & Dillehay, 1995; Kalven and Zeisel, 1966). This suggests that by the time the jury votes for the first time, jurors have already settled on a decision and that this decision does not change significantly (Sandys & Dillehay, 1995).

RESULTS

Condition and Juror Response Form

For all statistical analyses, an alpha level of .05 was used to test significance. In the current study, 23% of participants found the defendant guilty. A 2 x 3 MANOVA was run to examine the influence of condition on feedback provided through the Juror Response Form. Contrary to initial hypotheses, results indicated that neither photos, $F(2, 297) = 2.530$, $p = .081$, nor audio, $F(1, 297) = 0.004$, $p = .948$, had a significant influence on verdict. Additionally, no interaction between visual and auditory evidence was found to have an influence on verdict, $F(2, 297) = 1.895$, $p = .152$. A summary of the conviction rates for each condition are displayed in Table 1.

Table 1: *Percentage of Mock Jurors to Convict by Condition*

Condition	Conviction Rate
Emotional Photographs, Auditory Present	34.00%
Emotional Photographs, Auditory Absent	24.49%
Neutral Photographs, Auditory Present	16.00%
Neutral Photographs, Auditory Absent	28.57%
Photographs Absent, Auditory Present	18.00%
Photographs Absent, Auditory Absent	14.00%

Also contrary to previous findings, the presentation of visual evidence was not found to have a significant influence on jurors' perception of additional items of evidence, $F(2, 297) = 1.433$, $p = .240$. Auditory evidence also did not appear to have an influence on inculpatory value placed on additional pieces of evidence, $F(1, 297) = 1.122$, $p = .290$. No significant interaction was found, $F(2, 297) = 1.094$, $p = .336$.

When asked to rate their ability to formulate their decision fairly or impartially on a scale of one to eight, participants provided high ratings of their perceived impartiality, $M = 6.557$.

Table 2 summarizes average ratings for each condition. A MANOVA reveals that the presentation of auditory evidence had a significant influence on participants' ability to formulate their decisions fairly or impartially, $F(1, 297) = 4.608$, $p = .033$. Participants presented with auditory evidence reported being significantly less able to be fair or impartial ($M = 6.373$) than participants in the auditory evidence absent conditions ($M = 6.720$). Visual evidence, on the other hand, was not found to have a significant influence on perceived ability to be fair or impartial nor was an interaction discovered between visual and auditory evidence in regard to participants' abilities to formulate decisions fairly.

Table 2: *Condition x Ability to be Fair or Impartial*

Condition	Ability to be Fair or Impartial
Emotional Photographs, Auditory Present	6.280
Emotional Photographs, Auditory Absent	6.878
Neutral Photographs, Auditory Present	6.520
Neutral Photographs, Auditory Absent	6.612
Photographs Absent, Auditory Present	6.320
Photographs Absent, Auditory Absent	6.740

Neither visual nor auditory evidence presented to participants was found to have a significant influence on ratings of doubt, interpretation of reasonable doubt, sympathy toward the victim, or anger toward the defendant. A summary of the influence (in terms of *p*-value) of condition on these ratings can be found in Table 3.

Table 3: *Doubt, Reasonable Doubt, Sympathy, Anger x Visual, Auditory, Visual*Auditory*

	Visual	Auditory	Visual * Auditory
Doubt	.634	.387	.173
Reasonable Doubt	.524	.880	.567
Sympathy	.566	.187	.965
Anger	.136	.999	.183

Condition and PANAS-X Between-Subjects Difference Scores

Emotional state difference scores were determined by first calculating each of the 13 subscales of the PANAS-X (general negative, general positive, fear, hostility, guilt, sadness, joviality, self assurance, attentiveness, shyness, fatigue, serenity, and surprise) for pre- and post-review of case materials. Each subscale was calculated by finding the mean of the items included in that subscale. Difference scores were then calculated by subtracting the pre-subscale score (scores reported prior to review of the case materials) from the post-subscale score (scores reported after review of the case materials). An overall emotional difference score was also calculated by adding the absolute value of difference scores in each subscale. Therefore, the "Overall Emotional State Difference Score" represents the disparity between pre and post without regard to increases or decreases in emotion.

It was hypothesized that participants presented with both visual and auditory evidence would have the greatest emotional state difference scores followed by participants presented with only visual or auditory evidence. Participants presented with neither auditory nor visual evidence were hypothesized to have the least emotional state difference scores. However, on average, participants presented with only one mode of evidence – either visual or auditory – experienced the greatest differences in emotional state from pre- to post-review of case materials. A breakdown of these means can be found in Table 4.

Table 4: *Condition x Average Emotional State Difference Score*

Condition	Average Emotional State Difference Score
Emotional Photographs, Auditory Present	6.674
Emotional Photographs, Auditory Absent	5.956
Neutral Photographs, Auditory Present	5.639
Neutral Photographs, Auditory Absent	6.117
Photographs Absent, Auditory Present	6.668
Photographs Absent, Auditory Absent	5.003

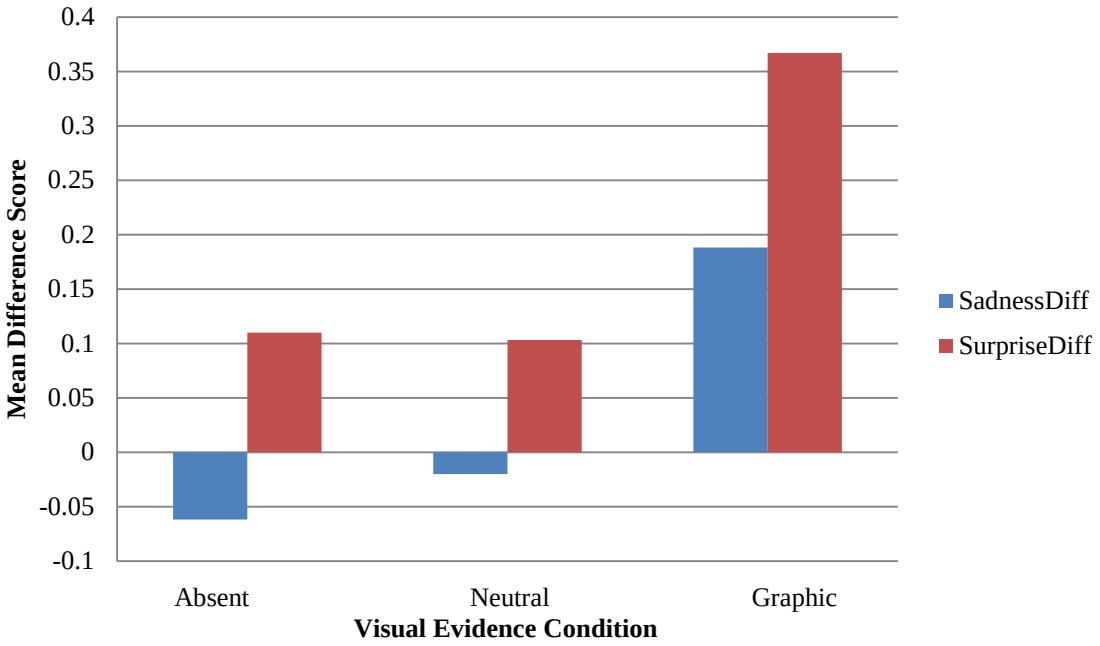
On average, participants presented with only visual or auditory evidence experienced emotional state difference scores of 6.246. Participants presented with both visual and auditory evidence experienced emotional state difference scores of 6.156. Participants presented with neither auditory nor visual evidence experienced emotional state difference scores of 5.003.

A 2 (auditory) x 3 (visual) MANOVA was conducted to examine the effect of condition on emotional state difference scores. Contrary to initial hypotheses, neither visual ($F(2, 294) = 0.570$, $p = .566$) nor auditory ($F(1, 294) = 2.446$, $p = .119$) evidence were found to have a significant influence on participants' overall emotional state difference score (the overall change in emotion the participant experienced). Additionally, no interaction between visual and auditory evidence was found in regard to their influence on overall emotional state difference scores, $F(2, 294) = 2.332$, $p = .099$.

Despite the lack of significant influence on overall emotional state difference scores, visual and auditory evidence did appear to influence specific emotions in participants. Photographs were found to have a significant influence on surprise rating difference scores, $F(2, 297) = 4.406$, $p = .013$. Post hoc comparisons using the Tukey B test revealed that pre-post surprise difference scores were significantly higher in the Graphic Photos groups ($M = 0.367$, $SD = 0.684$) than in the Neutral Photos groups ($M = 0.103$, $SD = 0.675$) or Photos Absent ($M = 0.110$, $SD = 0.784$) conditions. In other words, when participants were presented with graphic photos, they experienced greater increases in surprise ratings than participants presented with either neutral photos or no photos.

Photographs were also found to have a significant effect on sadness rating difference scores, $F(2, 297) = 7.494$, $p = .001$. Post hoc comparisons using the Tukey B test revealed that the pre-post emotional difference scores for sadness were significantly higher in Graphic Photos ($M = 0.188$, $SD = 0.594$) conditions than in Neutral Photos ($M = -0.020$, $SD = 0.439$) or Photos Absent ($M = -0.062$, $SD = 0.421$) conditions. Therefore, when participants were presented with graphic photos, they experienced increases in sadness ratings, whereas participants presented with either neutral photos or no photos experienced decreases in sadness ratings. Figure 1 displays the mean sadness difference and surprise difference scores for each of the visual evidence conditions.

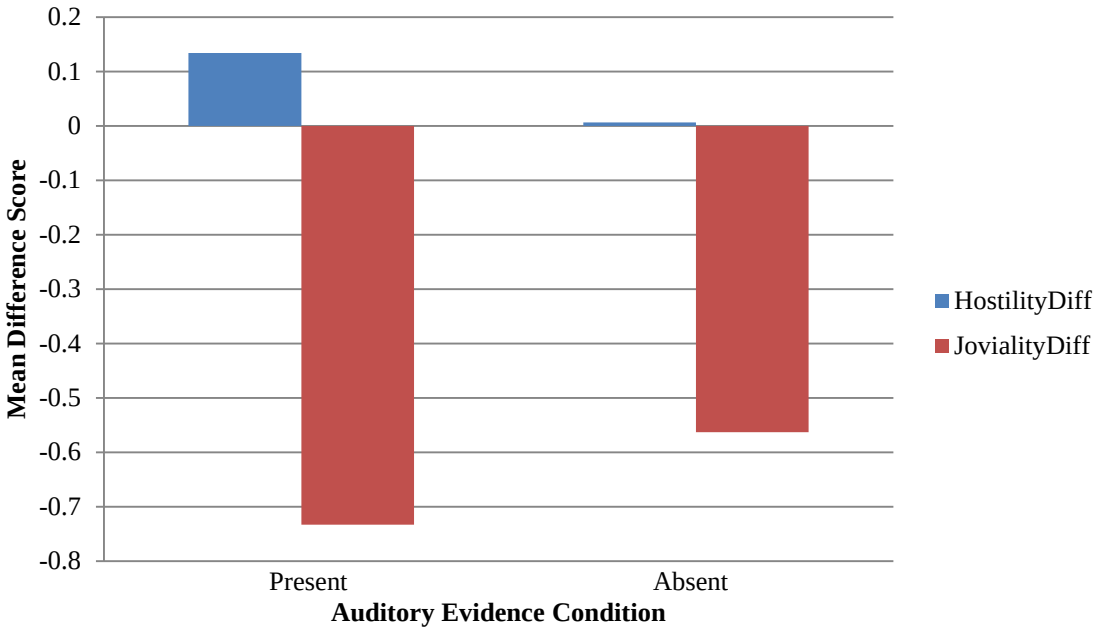
Figure 1: *Visual Condition x Sadness, Surprise*



Auditory evidence was found to have a significant effect on joviality, $F(1, 298) = 4.328$, $p = .038$. Participants who reviewed the auditory evidence as part of their case materials experienced greater decreases in joviality ratings ($M = -0.733$) than those who did not have

auditory evidence included (*M* = -0.563). Auditory evidence was also found to have a marginally significant effect on hostility, *F*(1, 298) = 3.814, *p* = .052 such that participants experienced greater increases in hostility when auditory evidence was present (*M* = 0.134) than those who were not exposed to the auditory evidence (*M* = 0.006). Figure 2 displays the mean hostility difference and joviality difference scores for each auditory evidence condition.

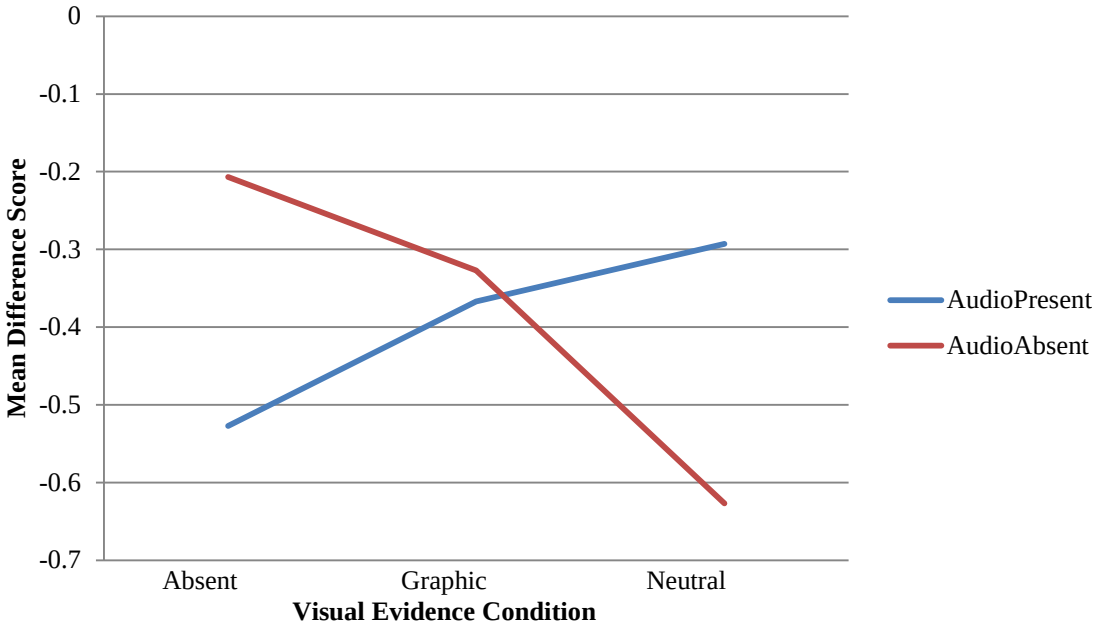
Figure 2: *Audio Condition x Hostility, Joviality*



An interaction between visual and auditory conditions was discovered in regard to influence on self assurance difference scores, Roy's largest root = 0.041, *F*(2, 298) = 7.403, *p* = .001. Participants experienced the least difference in feelings of self assurance when both visual and auditory evidence were absent. However, the greatest difference was experienced by participants exposed to neutral photos and no auditory evidence. Auditory evidence had a similar influence on ratings of self assurance in participants exposed to graphic photos. Figure 3

displays the interaction between visual and auditory conditions on self assurance difference scores.

Figure 3: *Visual & Auditory Evidence on Self Assurance*



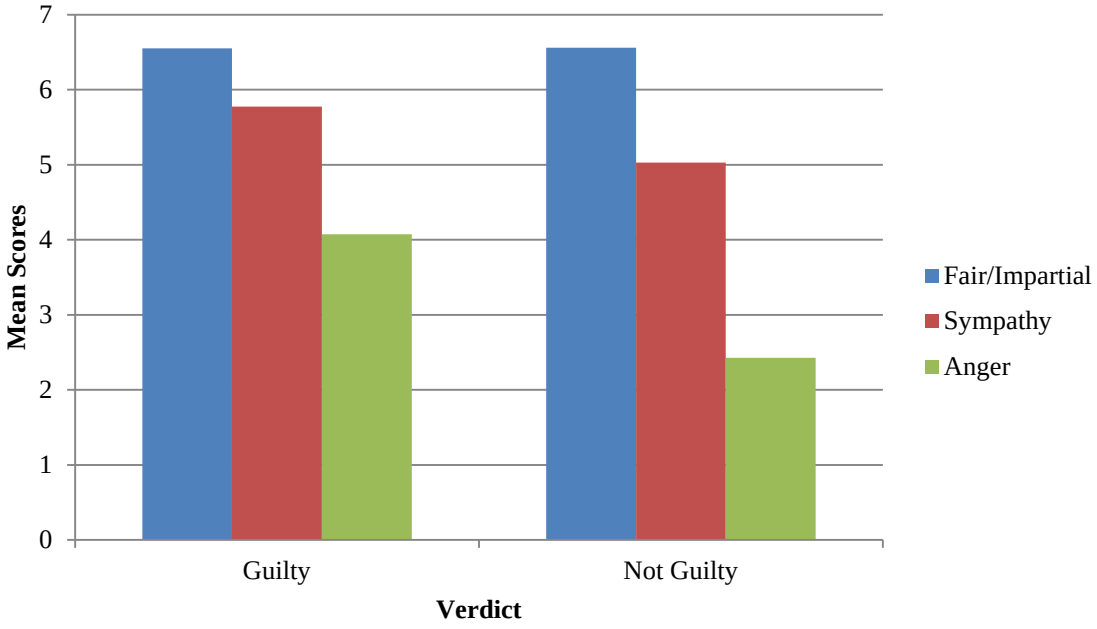
Verdict

As was expected by initial hypotheses, verdict was found to have a significant influence on participants' perception of individual items of evidence, $F(1, 296) = 50.456$, $p < .001$, such that participants providing guilty verdicts placed significantly higher inculpatory value on items of evidence than those providing not guilty verdicts ($M = 6.425$ when providing a guilty verdict; $M = 4.969$ when providing a not guilty verdict).

Guilty verdicts were found to be associated with higher ratings of anger toward the defendant than participants providing "not guilty" verdicts, $F(1, 296) = 50.355$, $p < .001$. In fact, participants providing "guilty" verdicts reported ratings almost twice that of participants

providing "not guilty" verdicts (*M* = 4.074 when providing a guilty verdict; *M* = 2.429 when providing a not guilty verdict). Participants providing a "guilty" verdict were also found to have experienced higher levels of sympathy toward the victim, $F(1, 296) = 5.896$, $p = .016$ (*M* = 5.776 when providing a guilty verdict; *M* = 5.030 when providing a not guilty verdict). Figure 4 displays averages for reported ability to act fairly or impartially, anger toward the defendant, and sympathy toward the victim for each verdict decision.

Figure 4: *Verdict x Ability to be Fair, Sympathy, Anger*



A significant influence on pre-post hostility difference scores was also found, $F(1, 296) = 12.555$, $p < .001$, such that those providing "guilty" verdicts experienced significantly greater increases in hostility (*M* = 0.286) than those providing "not guilty" verdicts (*M* = 0.008). Additionally, significance was observed between verdict and overall emotional difference, $F(1, 297) = 7.156$, $p = .008$. Participants coming to a "guilty" verdict decision had experienced

greater manipulation of their emotions between pre- and post-review of case materials (M = 7.020) than participants providing "not guilty" verdicts (M = 5.717).

Guilty verdicts were not, however, associated with lower ratings of the ability to be fair or impartial, $F(1, 296) = 0.001$, $p = .976$. Means are shown in Figure 4. The participants' ratings of their ability to be fair or impartial was not found to be associated with hostility difference scores ($F(7, 292) = 1.576$, $p = .142$) nor overall emotional state difference ($F(7, 292) = .409$, $p = .896$). Based on these results, one can infer that guilty verdicts were emotionally charged and at least partially dependent on the emotions felt toward the victim and defendant. However, the biasing influence of the emotions did not appear to be recognized by the participants who experienced them as evidenced by the lack of significant difference in their fairness ratings.

Demographics

Overall, female participants perceived themselves to be significantly less able to be fair or impartial than male participants, $F(1, 298) = 5.119$, $p = .024$. Marginal significance was also observed in regard to the interaction between sex and verdict, such that a greater percentage of males reported "guilty" verdicts (28%) than female participants (19%), $F(1, 298) = 3.385$, $p = .067$. No significant differences between sexes were found in regard to emotional state difference scores.

DISCUSSION

Many courts assume that photographs hold very low prejudicial value suggesting that the presence of photographs does not impede on the defendant's right a fair trial unless the photographs are overly gruesome. Furthermore, when evidence is admitted, many appellate courts are hesitant to reverse such decisions. The present research sought to empirically examine the prejudicial value of auditory and visual evidence in the context of a criminal case by examining the influence of these variables on the verdict decision itself and on the emotions of mock jurors. Results of the 2 (Auditory Present/Absent) x 3 (Graphic/Neutral/No Photos) multivariate analysis of variance suggest that other factors may interact with the effects of the presentation of visual evidence on jurors. Whereas prior studies have found significance in regard to the effect of visual evidence on verdict, the current study did not.

Influence of Visual and Auditory Evidence on Mock Juror Decision Making

Photographic Evidence

The visual stimuli presented as evidence in the present research were not found to have a significant influence on mock juror verdicts, confidence, doubt, interpretation of the definition of reasonable doubt, perception of inculpatory value placed on items of evidence, or the juror's ability to be fair or impartial. However, previous studies found that visual evidence had a significant influence on verdict (Bright & Goodman-Delahunty, 2006; Douglas, Lyon & Ogloff, 1997; Kassin & Garfield, 1991; Oliver & Griffitt, 1976; Whalen & Blanchard, 1982), reasonable doubt (Kassin & Garfield, 1991), and perception of additional pieces of evidence (Bright & Goodman-Delahunty, 2006; Douglas, Lyon & Ogloff, 1997; Oliver & Griffitt, 1976; Whalen &

Blanchard, 1982). Studies have been conducted in both criminal and civil trials and have had similar conclusions. This discrepancy between studies demands further investigation. One possibility for this discrepancy could be the order of the presentation of evidence.

Prior experiments did not specify the order in which evidence was presented to participants (i.e. visual stimuli presented before, after or simultaneously with other case materials). If presentation mode variables were presented simultaneously or prior to review of other case materials, the emotional impact stemming from these stimuli would distort participants' perceptions of following case materials. However, in the present study, presentation mode variables (visual or auditory evidence) were presented to participants after review of all other case materials (including summaries of opposing parties' arguments and initial jury instructions). Thus, it can be assumed that the initial perceptions and interpretations of these case materials (argument summaries and jury instructions) were relatively constant across conditions. Any difference in opinion between conditions would have been made after review of the photographic and auditory evidence (if applicable to condition). Such findings suggest that the point at which visual (and possibly auditory) evidence is presented during a trial may also play a role in the level and nature of impact the evidence has on jurors.

Auditory Evidence

Consistent with initial hypotheses, each group, on average, reported relatively high ratings on the ability to act fairly or impartially while formulating verdict decisions. However, participants in auditory present conditions reported being significantly less able than participants in auditory absent conditions. This finding suggests heightened potential for prejudicial impact of such evidence. Moreover, if the presence of auditory evidence limits the jury's ability to

formulate their decisions free of bias or partiality, this violates a core value of the criminal justice system, namely the defendant's right to a fair trial. Regardless of final verdict, the defendant's right to a fair trial is one protected by the Constitution. Thus, every action must be taken to preserve this right, including further investigation into the prejudicial value of auditory evidence and how and why auditory evidence may limit the ability to act fairly or impartially.

Although auditory evidence was not found to have a significant influence on verdict in the case used for the current study, it can easily be hypothesized that the derogatory influence on the jurors' ability to act fairly or impartially coupled with the manipulation of emotion may ultimately affect verdict when paired with the appropriate set of factors. Because of this, further investigation should be conducted to more accurately understand the prejudicial value of auditory evidence.

Guilty Verdicts

Consistent with initial hypotheses, guilty verdicts were found to be associated with heightened levels of anger toward the defendant and of sympathy toward the victim. These findings are consistent with prior theories suggesting that the attribution of blame is associated with heightened levels of anger toward the one being blamed and heightened levels of sympathy toward the victim. Furthermore, these findings provide additional evidence that emotions play a key role in the process of decision making.

Guilty Verdicts Emotionally Loaded

Mock jurors in the current study were supplied with jury instructions modeled after those used in the Sixth Circuit Court, the court with jurisdiction over the area where the chosen trial

was held. These instructions are very similar to jury instructions used around the country in that they instruct jurors to avoid allowing their emotions to influence their decisions. It is assumed by those who draft the jury instructions that by directing jurors to formulate their decisions devoid of emotion, the jurors will be able to do so. However, results of the current study suggest the opposite. In the context of a criminal case, it appears as though guilty verdicts were at least partially dependent on the jurors' emotions toward individuals involved in the case (namely, the defendant and the victim). Furthermore, it appears as though mock jurors were either unaware of their emotions or did not believe their emotions influenced their decision making process.

Guilty Verdicts Associated with Biased Perception of Ambiguous Evidence

As hypothesized, guilty verdicts were associated with greater inculpatory value placed on individual items of evidence. Prior studies have suggested that having a guilty verdict in mind causes people to view ambiguous stimuli in concordance with their desired blame attribution. Based on the results of the current study, it can also be hypothesized that the heightened inculpatory value placed on individual items of evidence led participants to a guilty verdict. Due to methodological limitations, the current study cannot determine the direction of the relation.

Emotion

Prior studies examining decision making and emotion have found that emotion can manipulate decision making (Bower, 1981; Clore, Schwarz, & Conway, 1994; Feigenson & Park, 2006; Niedenthal, 1990; Schwarz, et al., 1991; Schwarz & Clore, 1983, 1988, 2003), influence ratings of confidence and doubt (Feigenson & Park, 2006; Feigenson, 2009; Lerner & Tiedens, 2006; Ortony, Clore, & Collins, 1988; Smith & Ellsworth, 1985), and cause people to change their

perception of stimuli (Bower, 1981; Forgas & Bower; 1987; Petty, Fabrigar, & Wegener, 2003). Studies examining decision making in the context of a courtroom suggest that emotion plays a mediating role between different presentation modes and verdict decision (Bright & Goodman-Delahunty, 2006; Douglas, Lyon, & Ogloff, 1997). However, many of these studies failed to collect emotional state data.

The current study collected emotional state data prior to and following review of the case materials to arrive at a measure of the amount of change in emotion that the participants experienced. Whereas neither presentation modes (visual nor auditory) was found to have an influence on overall emotional state difference scores, each presentation manipulated participants' emotions. Visual evidence was able to induce change in ratings of sadness and surprise while the auditory recording influenced joviality and hostility.

Such findings are important for the future of research in the area of juror emotions. As was the case in the current study, overall emotional state information or even positive and negative affect scales are unable to adequately describe the influence a variable may have on emotions. Only through more discrete subscales can the researcher receive a clearer and more accurate representation of the influence on the emotions.

Order of Presentation of Case Materials

Because of the order of presentation of the case materials (first jury instructions, then summary of arguments followed by visual and auditory evidence if applicable), any emotional influence stemming from the presentation of the visual and/or auditory evidence would not have had an effect on participants' initial perceptions and opinions of the case. When the participants were initially reviewing the case, no significant differences in emotion existed between

conditions. Differences between conditions were not apparent until after participants had reviewed the summary of arguments from the opposing councils. Therefore, any emotional influence from the visual or auditory evidence would not have been able to affect initial perceptions of the case because they were not presented until afterward. The emotional influence was only able to manipulate the way the participants looked back on the information when formulating their verdict decision (provided they had not already cemented their decision prior to reviewing the visual and/or auditory evidence). Such findings suggest visual and auditory evidence, when presented in the context of a criminal case, may still have a dramatic effect. Future studies should examine the influence of presentation order on the nature and level of influence of both visual and auditory evidence.

Implications on the Legal System

When determining the admissibility of evidence, an attorney must ask whether the probative value of the evidence outweighs the prejudicial value in order for the evidence to be in accordance with Federal Rule of Evidence 403. Prejudicial value can be defined as the influence something has on the ability to act fairly or impartially when formulating an opinion about a matter, whereas probative value can be defined as the factory value that item holds. In the past, numerous courts have opinioned that photographic evidence holds very low prejudicial value such that the influence of a photograph on the jury is not believed to have a significant influence on the outcome of the case unless the photograph was closely tied with the conviction of the defendant. Additionally, that a photograph is gruesome is not grounds to have it thrown out. Despite these assumptions of the court, the current study provides evidence that photographic

and auditory evidence have a significant influence on jurors' emotions thereby increasing its prejudicial value and raising questions related to the defendant's right to a fair trial.

Manipulation of Emotion and Induction of Bias Threaten Ability to Be Fair or Impartial

In spite of jury instructions directing otherwise, participants' decisions were manipulated by their emotions such that guilty verdicts were emotionally charged and partially dependent on emotions felt toward the defendant and the victim. Furthermore, the influence of these emotions on the decision and the decision making process is left unknown to the participants experiencing them, suggesting that such an influence is not recognized Thus, participants (or jurors) will not compensate for the influence of these emotions. Similarly, participants presented with auditory evidence rated themselves to be significantly less able to be fair or impartial in comparison to participants not presented with this evidence. Whether participants were able to determine the source of their bias was not investigated.

Jury instructions direct jurors (and assume jurors able) to formulate their decisions without allowing bias or prejudice to influence their decisions. However, ratings of ability to act fairly or impartially averaged approximately six out of eight for each of the groups. It can therefore be assumed that the jurors were incapable of following the jury instructions exactly as they were set forth. The assumption that jurors are able to formulate their decisions without allowing their prejudice or biases to interfere with their decision making processes is flawed. Cognitive psychology suggests that when emotions or biases are involved in decision making, less cognition is employed (Greene & Haidt, 2002). In other words, jurors who have their emotions manipulated by particular factors throughout the case are going to employ less comprehensive problem solving skills throughout the process of formulating their decisions.

Jurors who are unable to devote the maximum cognition toward evaluating the evidence and formulating a decision may impede the defendant's right to a fair trial.

Jury instructions have been set up to ensure that jurors understand the trial and are able to act as "finders of fact" throughout the hearing. However, further investigation should be done exploring the nature of the biases induced by different evidentiary presentation modes and into the nature of acting as juror in a case. Such research may lead to the development of alternative wording to the present jury instructions to enable jurors to limit the influence of their biases rather than assume that the biases can be ignored.

Heightened Prejudicial Value Attributed to Particular Presentation Modes

The emotional influence of and bias induced by the presentation of visual and auditory evidence suggests potential for a heightened level of prejudicial value to be attributed to such presentation modes. At present, the objection stating that evidence breaks Federal Rule of Evidence 403, which requires the probative value (information provided by the evidence) to outweigh the prejudicial value (bias induced in jurors) is used as a "universal fallback objection" and is rarely sustained by the courts (Park, 2001). Courts have claimed that certain modes of evidence, such as photographs, hold very low prejudicial value and that they rarely render a trial unfair.

The results of the current study suggest that this objection should be approached more sensitively. Such manipulation of emotion has been shown to have a drastic influence on the way observers perceive evidence and ultimately formulate their decisions. Guilty verdicts have been found to be emotionally loaded and at least partially dependent on the observers' emotions felt toward the defendant and victim in a criminal case. Such association between guilty verdicts

and overall bias and prejudice suggests that the manipulation of emotion caused by different presentation modes of evidence has the potential of rendering trials unfair. Because of this, additional attention should be given to Federal Rule of Evidence 403 to limit the amount of prejudicial impact different pieces of evidence have on the jury.

Order of Presentation of Evidence

The order of the presentation of evidence could have played a role in the final outcomes of the study. Since the visual and auditory evidence (if applicable to condition) were not presented until after review of the brief case manuscript (including jury instructions and summaries of the opposing council's arguments), any bias induced by the presentation of this evidence did not have an influence on the participants' initial reactions to, interpretations of, or perceptions of the case. Instead, the visual and auditory evidence would have only had an influence on participants' reevaluation of the evidence when they were finalizing their verdict decisions. In the context of a courtroom, the results of this experiment could be applied to the influence of these presentation mode variables on jurors during closing arguments, after jurors have already heard all but the closing arguments from both sides.

Methodological Limitations

Much debate exists in regard to the best method of testing hypotheses regarding jury decisions. The context of a laboratory is much different from that of a courtroom and oftentimes the participants who volunteer for studies have personality traits much different from those sitting on juries. Additionally, the concern of generalizability should be raised regarding the results of the auditory evidence. Because, to the knowledge of the researchers, no prior studies

have been conducted in the area of measuring the prejudicial value of auditory recordings, additional factors such as the context and quality of the recording may have an influence on results.

Use of Undergraduate Students

As prior studies have suggested, undergraduate students are suitable participants as mock jurors when testing initial hypotheses (Rose and Ogloff 2001; Wiener, Krauss, & Lieberman, 2011). However, many studies have resulted in inconclusive findings in regard to the suitability of undergraduate students as a representative sample of jurors when attempting to find the exact influence of different factors. For this reason, future studies should attempt to employ community samples; such studies may receive different results than samples of undergraduate students.

Generalizability

The auditory recording used in the current experiment consisted of the phone call placed by the defendant to the 9-11 dispatcher reporting the incident. The contexts of auditory recordings are as diverse as the types of crimes committed; some are placed by the defendants, some by victims, and others by parties unaffiliated with the incident. Based on the current experiment, it is unclear as to whether the context of the auditory recording or the presence of auditory stimuli was the source of the emotional arousal and bias induced into participants. Further investigation should be done investigating multiple types and sources of auditory recordings as evidence to resolve these matters.

The current study was administered entirely online. Therefore, certain factors were absent from this study that are going to be present while a juror is attempting to interpret

evidence and formulate their decisions, such as other jurors, the personalities of the attorneys, and personalities of witnesses and experts. Additionally, the context of a courtroom has also been shown to have a significant influence on how jurors interpret and react to evidence (Lange, 2010).

Deliberation

Previous studies examining the influence of jury deliberation have suggested that pre-deliberation opinions are the best indicator of final decisions; they accurately predict final decisions in approximately 90% of cases (Kalven & Zeisel, 1966; Sandys & Dillehay, 1995). However, because the participants in the current study did not have their peers to influence their reactions to evidence, it is unclear as to whether having independent, rather than group, participation had an influence on the impact of the experimental variables.

Concluding Remarks

In the context of the Criminal Court, many courts assume jurors able to formulate verdict decisions without allowing emotional biases to influence their decisions. In fact, courts have previously held that photographs hold very low prejudicial value and rarely render court proceedings unfair. The current study suggests the contrary. Both visual and auditory modes of evidentiary presentation were shown to manipulate mock jurors' emotions, therefore limiting the cognitive resources available to formulate their decisions. Such findings suggest the potential for heightened prejudicial value in relation to these presentation modes. Results also suggest that jurors' guilty verdicts may be unknowingly emotionally loaded and at least partially dependent on their feelings toward key players of the case.

APPENDIX A: BRIEF CASE MANUSCRIPT

Judge's Instructions to the Jury

Members of the jury, it is time for me to inform you of the rules you must follow while listening to and deciding this case. I will begin by explaining your duties as a juror and the general rules that apply to every criminal case. I will then explain the elements of the crime that the defendant is accused of committing. Lastly, I will explain some rules you must use in evaluating testimony and evidence. Please listen very carefully to everything I am about to say.

Your Duties as a Juror

As a juror, you have two main duties. The first is to decide what the facts are from the evidence you read, see, and/or hear in court. Deciding what the facts are is your job, not mine. Nothing I say or do throughout this trial is meant to influence your decision about the facts in any way. Your second duty is to take the law that I give you, to apply it to the facts, and to decide if the government has proved the defendant guilty beyond a reasonable doubt. It is my job to instruct you about the law and your job to follow the instructions I give you, even if you disagree with them. Do not allow any bias, sympathy, or prejudice to influence the way you feel toward one side or the other or to influence your decision in any way.

General Rules of Criminal Cases

The defendant in this case has pleaded not guilty to the crime charged to him. His indictment is not at all evidence of guilt. The defendant starts the trial with a clean slate, with no evidence against him, and the law presumes his innocence. It is the responsibility of the government to prove the defendant is guilty, not the responsibility of the defendant to prove he is innocent. The presumption of innocence stays with the defendant unless the government presents evidence that overcomes the presumption and convinces you beyond a reasonable doubt that he is guilty. Proof beyond a reasonable doubt does not mean proof beyond all possible doubt. Possible doubts based purely on speculation are not reasonable doubts. A reasonable doubt is a doubt based on reason and common sense. It may arise from the evidence, lack of evidence, or the nature of the

evidence presented. If you are convinced the government has proved the defendant guilty beyond a reasonable doubt, say so by returning a guilty verdict. If you are not convinced, return a not guilty verdict.

The Elements of Murder

While reviewing the materials of this case, please keep in mind that the defendant is charged with and on trial for one charge. This is the charge over which you are responsible to make a decision.

The indictment accuses the defendant of murder in the first degree in violation of federal law. For you to find the defendant guilty of this crime, you must be convinced that the government has proven each and every one of the following elements beyond a reasonable doubt:

A.) The victim is dead.

B.) The death was caused by the criminal act of the defendant.

C.) There was a premeditated killing of the victim.

If you are convinced that the government has proved all of these elements, say so by returning a guilty verdict. If you have a reasonable doubt about any one of these elements, you must find the defendant not guilty of this charge.

Evidence Defined

As a member of the jury, it is your responsibility to make your decision based only on the evidence that you read, see, and/or hear here in court. Evidence in this case includes those materials presented here. Nothing else is evidence. Base your decisions solely on the evidence presented throughout the case.

Evaluating Evidence

When evaluating evidence, use your common sense to attribute the weight you believe the evidence deserves. If past experiences have led you to believe that certain evidence reasonably leads to a particular conclusion, you are free to reach that conclusion.

Plaintiff's Argument

On Augist 11, 2008, at 10:49 pm, two calls were made to 911 from 5250 Crested Owl Court, Morrow, Ohio, the home of Sarah and Ryan Widmer. One call was from the cell phone of Ryan Widmer and was terminated after 3 seconds without connecting to 911. The second call, from the cell phone of Sarah Widmer, connected and was recorded. The recording was admitted as evidence during the trial. (State's Exhibit 2).

'The Defendant's first words on the 911 call were, "My wife fell asleep in the bathtub and I think she's dead." The dispatcher then received information from the Defendant as to the location of the home. The Defendant confirmed that Sarah Widmer was still in the bathtub and that he had drained the water. He stated that he attempted to perform CPR on her. The 911 dispatcher then directed him to move Sarah Widmer onto a flat surface. The 911 recording revealed that only 29 seconds elapsed between the time that Ryan Widmer set down the phone and when he indicated that he had moved Sarah Widmer into the master bedroom floor.

On the 911 recording, sirens and the arrival of the first responder can be heard. According to the evidence at trial, Deputy Steve Bishop arrived on scene within two minutes from the time that Ryan Widmer stated that he had moved Sarah Widmer out of the bathtub and onto the bedroom floor. When Deputy Bishop arrived, he found Sarah Widmer unclothed and lying on the floor in the master bedroom. He testified that she had no pulse and was not breathing. He observed that her body was dry and only her hair was damp.

According to the evidence, Paramedic Jason Stevens and Emergency Medical Technician Jeff Teague arrived on the scene within one minute of Deputy Bishop's arrival. Both Paramedic Stevens and EMT Teague testified that Sarah Widmer's body was dry and her hair was wet.

At the Widmer home, EMS personnel applied heart monitor pads to the chest and back of Sarah Widmer. EMT Jeff Teague and Officer Quillen Short of Hamilton Township Police Department both testified that it is important for the body to be dry in order for these pads to be applied correctly. Further, the monitor has an automated electronic defibrillator that can deliver an

electric shock to the body, which is another reason the body must be dry. Therefore, because of their concerns regarding the monitor, both EMT Teague and Officer Short specifically noted that the body was dry.

Monitor results indicated that Sarah Widmer was asystole, meaning that she had no electrical activity in her heart. Paramedic Stevens attempted intubation during this time. He testified that the intubation was difficult and that Sarah Widmer's chin kept pulling forward. Further, he testified, as did EMT Teague and other witnesses, that the carpeting around Sarah Widmer was dry. All of these witnesses were kneeling on the floor beside Sarah Widmer's body.

Sergeant Lisa Elliot testified that when she arrived, she stood in the doorway of the bathroom between Sarah Widmer's feet. Sgt. Elliot testified that she also observed that Sarah Widmer's body was dry and that her feet and hands did not show any evidence of pruning. She looked into the bathroom and observed that the floor of the bathroom was dry.

EMS personnel transported Sarah Widmer to Bethesda Arrow Springs Hospital. During the transport, Paramedic Stevens made three attempts to insert an IV line. Paramedic Stevens testified that Sarah Widmer had no blood pressure and that her veins were collapsed, making it difficult to successfully start the IV. Paramedic Stevens testified that the veins would only have sufficient pressure during chest compressions. The testimony of the witnesses is that CPR chest compressions only produce 25% of normal blood flow.

Paramedic Stevens successfully inserted an external jugular IV line only six minutes before arriving at the hospital. He injected Sarah Widmer with epinephrine through the IV line. Medical records from Arrow Springs show that additional medications were administered upon arrival. Additional medical interventions were attempted at the Emergency Room. Sarah Widmer was pronounced dead at 11:40 pm.

The Hamilton Township Police Department investigated the scene and observed that the carpet where Sarah Widmer was lying was dry other than two areas of bloody foam and an area of wet

material that was later determined to be fecal material. They observed that the tub had been drained and the tub edge was dry. The bathroom floor was also dry.

The Defendant claimed that he was downstairs watching the Bengals game while Sarah Widmer was upstairs taking a bath. The officers observed, however, that the downstairs television was not on the correct station. In fact, the Bengals game was on the television in the master bedroom upstairs when the first responders arrived.

The bathtub was examined for fingerprints. Criminalist Bill Hillard stated that he could find no identifiable prints, not even those of the Defendant or Sarah Widmer. Hillard observed finger markings from a smaller person on the far side of the tub. The markings were trailing downwards. (See State's Exhibit 33). Additionally, there were forearm prints on the front of the tub where items were found placed. Criminalist Hillard indicated there was evidence that the tub had been wiped down. A moist Lysol wipe was recovered from the edge of the tub by police.

Warren County Coroner Dr. Russell Uptegrove performed an autopsy of Sarah Widmer on August 12, 2009. The autopsy revealed areas of bruising and hemorrhage to the anterior neck, both left and right side of the neck, and back of the neck. Toxicology showed no signs of drugs or alcohol. There were no injuries or disease to Sarah Widmer's heart or brain. Based on the autopsy findings, the crime scene evidence, and discussion with witnesses – Dr Uptegrove concluded that the cause of death was drowning, and the manner of death was homicide. Dr. C. Jeff Lee also testified as an expert in forensic pathology, and he agreed with Dr. Uptegrove's findings.

Defense's Argument

Ryan Widmer, 27 years old, was employed by the Warren County Convention and Visitor's Bureau. He married Sarah Steward in April 2008. According to friends, co-workers and family,

the young couple deeply loved each other and no one could say a negative thing about either Ryan or Sarah.

Also, according to everyone who knew Sarah, Sarah would sleep more than a newborn baby. Sarah would fall asleep at Bengal's football tailgate parties, in taverns while with friends, at movies, in the bathtub, and in other unusual locations. According to a supervisor, Dr. Messmer, Sarah, who worked as a dental hygienist, would go out to her car on her lunch break to sleep instead of eating with co-workers. He would also find her sleeping in her car in the morning when he arrived at work. Numerous friends testified that Sarah frequently complained of severe headaches.

On August 11, 2008, Sarah returned home from work with a severe headache and neck pain. She terminated a long-distance call with her best friend because of the pain. After watching television, she told Ryan she was going upstairs to take a bath and go to bed. Ryan remained downstairs watching a Cincinnati Bengals exhibition game for another 30 minutes or more. Ryan subsequently retired to the upstairs master bedroom where the master bath was located. He stripped down to his boxer shorts, turned on the television, walked into the bath, and found Sarah unconscious and submerged in the bath water. Instinctively, Ryan pulled the drain plug, lifted her upper torso out of the water, and attempted to get a response from her. Because of Sarah's propensity to fall asleep in the tub, Ryan's first thought was that she had once again fallen asleep.

When his attempts to get a response from Sarah failed, Ryan grabbed his cell phone from the dresser inside the bedroom. The 911 call failed. Seeing Sarah's phone on the bathroom sink, he grabbed it and was able to reach the 911 operator.

The 911 operator advised Ryan to pull Sarah out of the tub, lay her on a flat surface, and attempt CPR. Ryan was also advised to run downstairs to unlock the door for rescue personnel. From the time Ryan successfully placed the 911 call until the first responder arrived by Sarah's side, 6-1/2 minutes had elapsed.

For the next 45 to 60 minutes EMS and ER personnel aggressively attempted to revive Sarah. EMS attempted and failed five intubations, which required a metal blade to be inserted into Sarah's throat to help move the vocal cords so a hard plastic tube could be inserted into the lungs to create an airway. CPR, which includes compressing the chest 1-1/2 to 2 inches per compression at 100 compressions per minute, was performed throughout the 45 minute resuscitation period.

EMS personnel noted that the body was dry, with one EMS person saying that the body was not overly moist. Sarah's hair was wet and her body was hot to the touch. Three separate police officers responding to the Widmer home very briefly interviewed Ryan, who was still in his boxers, while EMS personnel feverishly worked on Sarah in the bedroom.

The police did not observe any marks on Ryan nor did they find any signs of violence anywhere in the home. Police did observe blood coming from Sarah's mouth, but all experts who testified at trial agreed that the blood observed by the police was a result of the drowning process.

It was noted later that the bathroom floor was dry and everything in the bathroom was relatively orderly. A search of the premises resulted in no wet towels, rags or clothing being found; the dryer was cold.

The EMS responders noted no trauma, the ER personnel noted no trauma, and the coroner's investigator who carefully bagged Sarah's hands for later examination looked closely at her body and noted no trauma. In fact, Sarah's fingernails had been French manicured, and they were perfectly intact. Ryan's DNA was not found under her fingernails, as one might expect had there been a struggle. Ryan also had no scratches on his body or any other physical marks that would suggest a struggle whatsoever.

All the medical experts (seven testified at trial) agreed that Sarah Widmer drowned. With the exception of the sleep expert, who was not qualified on the subject of forensic pathology, four pathologists and two emergency room physicians testified to the case of death. The defense experts, all board certified, and the state's experts, not all of whom were board certified, differed

as to the cause of the injuries found during the two autopsies. All agreed that many of the injuries were the result of the resuscitation efforts. The two pathologists and one emergency room doctor for the defense said that all the injuries were consistent with the 45 minutes of resuscitation efforts. The pathologists and emergency room physician for the state agreed that most of the injuries were a result of the attempts to revive Sarah, but there were differences of opinion as to whether all of the injuries were a result of the resuscitation efforts.

Although the defense never claimed that Sarah fell asleep and drowned, the state put on a sleep expert to explain that otherwise healthy individuals do not fall asleep and drown; an individual would wake up if suddenly submerged in water. None of the experts could rule out that Sarah may have had a seizure or a sudden cardiac event which would have precipitated her drowning in the tub.

Ryan was charged before the autopsy was complete, and was indicted a few days thereafter. In the months that followed the indictment, the detectives interviewed all of Ryan's and Sarah's friends, co-workers, and family, and they combed through the business and home computers, bank and financial records, personal files, phone records, employer personnel files, and they found nothing. Det. Braley indicated at trial that there was no motive and everything uncovered revealed that Ryan was well-liked and mild-mannered. Nor did Ryan have any history of violence or even any criminal record. Sarah's friends confirmed at trial what the police discovered: Ryan and Sarah were very much in love, had future plans for a family, and never exhibited any disharmony whatsoever.

At trial, a central issue was whether Ryan fabricated the 911 call. In other words, had he removed Sarah's body from the bath long before the 911 call. The answer to this question depended in part on how long it takes a body to dry after being removed from the bath or shower, because the EMS responders who arrived 6 ½ minutes after the 911 call noted that Sarah's hair was wet but that her body was dry or not "overly moist." Ryan was unsure of how long he had tried to revive Sarah before calling 911.

Judge's Instructions to the Jury

Before you make your verdict decision, let us review some of the rules presented to you at the start of this case.

As a juror, it is your duty to decide what the facts are from the evidence you have read, seen, and/or heard throughout this case. Do not allow sympathy or prejudice to influence your decision one way or the other. Your second duty is to take the law given to you, apply it to the facts, and to decide if the government has proved the defendant guilty beyond a reasonable doubt. Proof beyond a reasonable doubt does not mean proof beyond all possible doubt. Possible doubts based purely on speculation are not reasonable doubts. A reasonable doubt is a doubt based on reason and common sense. It may arise from the evidence, lack of evidence, or the nature of the evidence presented. If you are convinced the government has proved the defendant guilty beyond a reasonable doubt, say so by returning a guilty verdict. If you are not convinced, return a not guilty verdict.

The defendant has been accused of murder in the first degree in violation of federal law. For you to find the defendant guilty of this crime, you must be convinced that the government has proven each and every one of the following elements beyond a reasonable doubt:
A.) The victim is dead.
B.) The death was caused by the criminal act of the defendant.
C.) There was a premeditated killing of the victim.

If you are convinced that the government has proved all of these elements, say so by returning a guilty verdict. If you have a reasonable doubt about any one of these elements, you must find the defendant not guilty of this charge.

APPENDIX B: AUDITORY EVIDENCE

Dispatcher: 911, what is your emergency?

Ryan: My wife fell asleep in the bathtub and I think she's dead.

Dispatcher: What's…What's the address?

Ryan: 5250 Crested Owl Court Morrow, OH

Dispatcher: Okay I need you to calm down for me. I can't understand the address, what was it?

Ryan: 5250 Crested Owl Court

Dispatcher: 5250 Crested Owl? In Hamilton Township?

Ryan: Yes, Morrow, Ohio

Dispatcher: Now what's going on?

Ryan: She fell asleep in the bathtub I think. I was downstairs, I just came up here and she was laying face down in the bathtub.

Dispatcher: In… In the water?

Ryan: Yes.

Dispatcher: How old is she?

Ryan: She's 24.

Dispatcher: And she's in the bathtub?

Ryan: Yes, she's in....the water's draining right now. I tried to do everything I could. I…

Dispatcher: Have you taken her out of the water now?

Ryan: Yes the water's completely drained but she's just laying here unconscious and I think she's…

Dispatcher: So she's still in the bathtub?

Ryan: Yes. Yes.

Dispatcher: Okay. Okay. So...what...you drained the water out of the tub?

Ryan: Yes

Dispatcher: How long was she in the bathtub?

Ryan: I...I have... 15 minutes, half hour, somewhere in there. I was downstairs watching TV. She falls asleep in the tub all the time but…

Dispatcher: And how are you related to her? Are you her mother or…

Ryan: I'm her...I'm her husband.

Dispatcher: Husband?

Ryan: Yes.

Dispatcher: What's your name?

Ryan: Ryan Widmer.

Dispatcher: Spell that last name for me Ryan.

Ryan: W-I-D-M-E-R

Dispatcher: And the phone number your calling me from?

Ryan: XXX-XXX-XXXX. Yes it's her cell phone.

Dispatcher: Okay, have you tried CPR?

Ryan: Yes. As much as I could. What little bit I know… Is somebody coming?

Dispatcher: Yeah, they're already on their way Ryan. There's no way you can get her out of the bathtub?

Ryan: I can try but I have to set the phone down.

Dispatcher: Okay. Go and get her out of the bathtub and get her on a flat surface.

Ryan: Okay. Okay. I'm dropping the phone.

Ryan: She's on a flat surface.

Dispatcher: What's that?

Ryan: She's on a flat surface.

Dispatcher: Okay, go ahead and get back to doing CPR....try to do CPR. They'll be there in a little bit, okay?

Ryan: K

Dispatcher: Is your....is your doors unlocked?

Ryan: No

Dispatcher: Are you using....Okay run and unlock the doors so when they....they can get in....when they come back

Ryan: Okay. They're unlocked now.

Dispatcher: Okay

Ryan: We're upstairs.

Dispatcher: You're upstairs?

Ryan: Yeah

Dispatcher: You have more than one bathroom in the house?....er

Ryan: No, there's two but the upstairs is the only one with a bathtub

Dispatcher: Ry...Ryan I need you to go ahead and put the phone down and try CPR for me?

Ryan: Okay. Yes I am.

Distant sounds of Ryan Widmer, dog barking, and police radio.

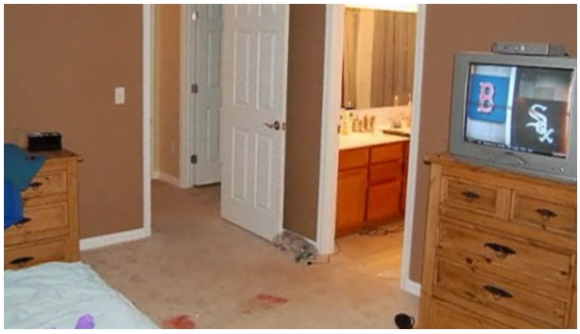
Dispatcher: There’s someone out there.

Distant sounds of Ryan Widmer conversation with rescue personnel, and dog barking.

APPENDIX C: VISUAL EVIDENCE

Appendix C-1

For the purposes of this study, you will be presented with 20 photographs from a recent murder case. Please rate each image for the modifiers listed below.



Gruesome
Not at all 1 2 3 4 5 Extremely

Upsetting
Not at all 1 2 3 4 5 Extremely

Disgusting
Not at all 1 2 3 4 5 Extremely

Mundane
Not at all 1 2 3 4 5 Extremely

Ordinary
Not at all 1 2 3 4 5 Extremely

Appendix C-2

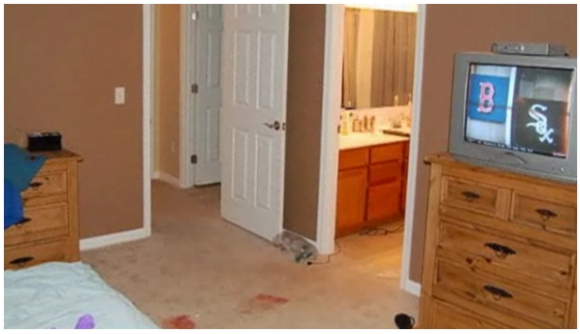
Image	N	Minimum	Maximum	Mean	Std. Deviation
Image 1	101	1.00	3.80	2.1941	.76129
Image 2	100	1.00	5.00	2.8640	.85464
Image 3	100	1.00	4.20	1.7780	.71514
Image 4*	100	1.00	2.60	1.3260	.42607
Image 5	95	1.00	4.00	1.9326	.60537
Image 6	96	1.00	4.20	1.8917	.70542
Image 7	99	1.00	3.40	1.4727	.54769
Image 8	99	1.00	3.60	1.7697	.66416
Image 9	96	1.00	4.80	2.9958	.84752
Image 10**	99	1.40	5.00	3.4404	.78869
Image 11**	98	1.40	5.00	3.2673	.86772
Image 12	99	1.00	3.80	2.3010	.63463
Image 13*	99	1.00	2.80	1.3030	.41734
Image 14*	100	1.00	3.00	1.4520	.48294
Image 15	99	1.00	4.80	2.0909	.90544
Image 16	101	1.00	4.40	1.9188	.71620
Image 17	101	1.00	3.80	1.7703	.66295
Image 18	98	1.00	4.40	2.4857	.83580
Image 19	98	1.00	5.00	2.5673	.87894
Image 20**	99	2.00	5.00	3.9030	.78888

*Included in Neutral Photo Condition
**Included in Graphic Photo Condition

Appendix C-3

Please review the following photographs submitted as evidence in the case of State of Ohio v. Ryan Widmer. A brief description of the photograph is provided.

Bedroom where Mrs. Widmer was found



Bloodstain on the carpet where Mrs. Widmer was found. Blood leaks from the nose during the drowning process.

Fecal stain on the carpet where Mrs. Widmer was found. The bowels release during the dying process.

Depiction of the injuries to Mrs. Widmer. EMT personnel reported attempting to resuscitate Mrs. Widmer for approximately 45 minutes. Part of this process included cutting slits into her throat to insert tubes to help with breathing.

Appendix C-4

Please review the following photographs submitted as evidence in the case of State of Ohio v. Ryan Widmer. A brief description of the photograph is provided.

Front of the Widmer residence

Bathroom where Mrs. Widmer was said to have died. Rescue personnel reported the bathroom floor to be dry.

Laundry room in the Widmer residence. It was found that there were no wet or damp towels and that the dryer was not warm upon the arrival of rescue personnel

The following Lysol wipes were found at the scene of the incident. Rescue personnel reported finding a moist Lysol wipe on the edge of the tub, possibly explaining the lack of identifiable fingerprints on the tub.

APPENDIX D: POSITIVE AND NEGATIVE AFFECT SCHEDULE – EXPANDED FORM (PANAS-X)

This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way at this moment.

	1 - very slightly or not at all	2 - a little	3 - moderately	4 - quite a bit	5 - extremely
Cheerful	( )	( )	( )	( )	( )
Disgusted	( )	( )	( )	( )	( )
Attentive	( )	( )	( )	( )	( )
Bashful	( )	( )	( )	( )	( )
Sluggish	( )	( )	( )	( )	( )
Daring	( )	( )	( )	( )	( )
Surprised	( )	( )	( )	( )	( )
Strong	( )	( )	( )	( )	( )
Scornful	( )	( )	( )	( )	( )
Relaxed	( )	( )	( )	( )	( )
Irritable	( )	( )	( )	( )	( )
Delighted	( )	( )	( )	( )	( )
Inspired	( )	( )	( )	( )	( )
Fearless	( )	( )	( )	( )	( )
Disgusted with self	( )	( )	( )	( )	( )
Sad	( )	( )	( )	( )	( )
Calm	( )	( )	( )	( )	( )
Afraid	( )	( )	( )	( )	( )
Tired	( )	( )	( )	( )	( )
Amazed	( )	( )	( )	( )	( )
Shaky	( )	( )	( )	( )	( )
Happy	( )	( )	( )	( )	( )
Timid	( )	( )	( )	( )	( )
Alone	( )	( )	( )	( )	( )
Alert	( )	( )	( )	( )	( )
Upset	( )	( )	( )	( )	( )
Angry	( )	( )	( )	( )	( )
Bold	( )	( )	( )	( )	( )
Blue	( )	( )	( )	( )	( )
Shy	( )	( )	( )	( )	( )
Active	( )	( )	( )	( )	( )
Guilty	( )	( )	( )	( )	( )
Joyful	( )	( )	( )	( )	( )

Nervous	( )	( )	( )	( )	( )
Lonely	( )	( )	( )	( )	( )
Sleepy	( )	( )	( )	( )	( )
Excited	( )	( )	( )	( )	( )
Hostile	( )	( )	( )	( )	( )
Proud	( )	( )	( )	( )	( )
Jittery	( )	( )	( )	( )	( )
Lively	( )	( )	( )	( )	( )
Ashamed	( )	( )	( )	( )	( )
At ease	( )	( )	( )	( )	( )
Scared	( )	( )	( )	( )	( )
Drowsy	( )	( )	( )	( )	( )
Angry at self	( )	( )	( )	( )	( )
Enthusiastic	( )	( )	( )	( )	( )
Downhearted	( )	( )	( )	( )	( )
Sheepish	( )	( )	( )	( )	( )
Distressed	( )	( )	( )	( )	( )
Blameworthy	( )	( )	( )	( )	( )
Determined	( )	( )	( )	( )	( )
Frightened	( )	( )	( )	( )	( )
Astonished	( )	( )	( )	( )	( )
Interested	( )	( )	( )	( )	( )
Loathing	( )	( )	( )	( )	( )
Confident	( )	( )	( )	( )	( )
Energetic	( )	( )	( )	( )	( )
Concentrating	( )	( )	( )	( )	( )
Dissatisfied with self	( )	( )	( )	( )	( )

APPENDIX E: JUROR RESPONSE FORM

Juror Response Form

You have been presented with the story and evidence as it was presented by both the plaintiff and defense. It is now your responsibility, as a juror, to apply the information you have gathered in order to come to an estimate of likelihood of guilt of the defendant in question. The following questions will ask you about your verdict decision. Please answer each question as truthfully as possible.

After reviewing the statements and evidence presented by both the plaintiff and defense in the case of State of Ohio v. Ryan Widmer (2009), do you find the defendant, Ryan Widmer, guilty or not guilty for the death of Sarah Widmer?

( ) Guilty

( ) Not Guilty

How confident are you in your verdict? Please use the following scale to report your answer.

Not at all confident	1	2	3	4	5	6	7	8	Very Confident

How much doubt is present in your mind concerning your verdict? Please use the following scale to report your answer.

No doubt at all	1	2	3	4	5	6	7	8	A great deal of doubt

Jurors are expected to convict only if the likelihood of guilt exceeds the threshold of reasonable doubt. In your opinion, how much doubt do you consider reasonable to be present when deciding to convict? Please use the following scale to report your answer.

No doubt at all	1	2	3	4	5	6	7	8	A great deal of doubt

The following items (A-D) are pieces of evidence presented throughout the case. Please indicate the inculpatory value you place on each of these items (i.e. to what extent are the following items sufficient to convict?). (All quotations are taken from evidence presented by both the plaintiff and defense from the case in question.)

A. "The 911 recording revealed that only 29 seconds elapsed between the time that Ryan Widmer set down the phone and when he indicated that he had moved Sarah Widmer into the master bedroom floor."

None	1	2	3	4	5	6	7	8	A great deal

B. "Both Paramedic Stevens and EMT Teague testified that Sarah Widmer's body was dry and her hair was wet."

None	1	2	3	4	5	6	7	8	A great deal

C. "It was noted later that the bathroom floor was dry and everything in the bathroom was relatively orderly."

None	1	2	3	4	5	6	7	8	A great deal

D. "The pathologists and emergency room physician for the state agreed that most of the injuries were a result of the attempts to revive Sarah, but there were differences of opinion as to whether all of the injuries were a result of the resuscitation efforts."

None	1	2	3	4	5	6	7	8	A great deal

To what extent do you feel you were able to be fair or impartial when making your decision?

Not at all able	1	2	3	4	5	6	7	8	Very able

Please rate your level of sympathy or empathy toward the victim, Sarah Widmer. Please use the following scale to report your answer.

Not at all sympathetic	1	2	3	4	5	6	7	8	Very sympathetic

Please rate your level of anger toward the defendant, Ryan Widmer. Please use the following scale to report your answer.

Not at all angry	1	2	3	4	5	6	7	8	Very angry

APPENDIX F: MANIPULATION CHECK QUESTIONNAIRE

Case Questionnaire

To conclude our study, we need to ask you a few questions about the case and materials you recently reviewed. Please read all questions and answers thoroughly before answering. Those failing the questionnaire will not receive credit for their participation and their responses will not be included in the final data set.

Prior to your participation in this study, had you any knowledge of the case of State of Ohio v. Ryan Widmer (the case included in this study)?

( ) Yes

( ) No

If you answered yes to the previous question, please describe any opinions you held regarding the case of State of Ohio v. Ryan Widmer based on your previous exposure to the details of this case.

Where did the defendant, Ryan Widmer, claim to be during the death of his wife, Sarah Widmer

( ) At work

( ) Watching television

( ) Taking a shower

( ) Walking the dog

Which room was the victim, Sarah Widmer, found in when rescue personnel arrived at the scene?

( ) The bedroom

( ) The bathroom

( ) The laundry room

( ) The living room

Did rescue personnel attempt to resuscitate the victim, Sarah Widmer, upon arrival at the Widmer home?

( ) Yes

( ) No

During the autopsy, were doctors able to find evidence of disease or injury to either Sarah Widmer's heart or brain?

( ) Yes

( ) No

APPENDIX G: PILOT STUDY EXPLANATION OF RESEARCH

Explanation of Research

Title of Project: Mock Juror Ratings of Visual Evidence

Principal Investigator(s): Karen Mottarella, Psy.D.

Co-Investigator(s): Emily Edwards, B.A., Shannon Whitten, Ph.D.

You are being invited to take part in a research study. Whether you take part is up to you.

- The purpose of this study is to examine participants' impressions of photographic images that have been used as visual evidence in a court of law.
- Individuals participating in this study will review a set of photographic images that were presented as visual evidence in an actual felony murder case. Participant will be asked to rate their impression of these images on a 1-5 rating scale containing descriptive words. The photographic images in this study are somewhat graphic as they are connected to a crime scene in which an alleged homicide may have occurred. However, the images do not depict a person or a body. To give you perspective, these photographs are far less graphic than crime scenes depicted in T.V. crime shows such as CSI and NCIS. However, some images may be distressing for an individual, particularly for individuals who have been impacted by a violent crime. For that reason, you can choose not to take part in this study. In addition, should you decide to participate in this study, you will be free to skip any images or particular questions, and will not lose any benefits if you do so. This study is entirely online and can be completed from a location that provides you with internet access.
- We expect that this study will take no more than 30 minutes to complete.

You must be 18 years of age or older to take part in this research study.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints If you have questions, concerns, or complaints, or think the research has hurt you, talk to Dr. Karen Mottarella, Building 3 Room 226, Psychology Department, University of Central Florida Palm Bay Campus. Dr. Mottarella can be reached by phone at 321-433-7987 or by email at kmottare@mail.ucf.edu.

IRB contact about your rights in the study or to report a complaint: Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901.

In order to continue with this study, we must obtain your consent. By checking the boxes below, you are indicating that you are at least 18 years of age and that you understand your rights and responsibilities as a participant in this study as outlined above.

[ ] I am at least 18 years of age.

[ ] I understand my rights and responsibilities as a participant in this study.

APPENDIX H: PILOT STUDY INTRODUCTION

Introduction

Thank you for agreeing to participate in this study. You are free to skip any image or any particular question that you do not feel comfortable about. If at any time you would like to discontinue your participation in this research, you are free to do so at no penalty. However, those choosing to discontinue their participation will not be credited through SONA participation and will not have their data included for data analysis.

Throughout your participation in this study, you will be presented with 20 images from a recent murder case. You will be asked to rate each image on a variety of modifiers. Please review all images carefully and answer as truthfully as possible.

APPENDIX I: PILOT STUDY DEBRIEFING STATEMENT

Debriefing Statement

For the survey entitled: “An Examination of Juror Decision Making”

Dear Participant:

During this study, you were asked to review case materials from a recent murder case. You were told that the purpose of the study was to examine the influence of presentation mode on mock jurors’ decisions in murder trials. The actual purpose of the study was to examine the influence of the presentation of auditory recordings and photographs on mock jurors’ emotions and decisions in murder trials.

We did not tell you everything about the purpose of the study because knowledge of the true purpose may have caused bias in participants’ responses and decisions.

You are reminded that your original consent document included the following information: “If you decide to leave the research or do not complete the study, you will not receive credit for your participation and your responses will not be included for analysis”. If you have any concerns about your participation or the data you provided in light of this disclosure, please discuss this with us. We will be happy to provide any information we can to help answer questions you have about this study.

Now that you know the true nature of the study, you have the option of having your data removed from the study. Please be reminded that your responses in this study are de-identified and cannot be linked to you.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints, or think the research has hurt you, talk to Emily Edwards, Undergraduate Student, Psychology Program, College of Sciences, edwards.ucfresearch@gmail.com or Dr. Mottarella, Faculty Supervisor, Department psychology by email at Karen.Mottarella@ucf.edu.

IRB contact about your rights in the study or to report a complaint: Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901.

If you have experienced distress as a result of your participation in this study, the UCF Community Counseling Center is available to all students of UCF (Phone: (407)823-2811; Fax: (407)823-5415; Email: councntr@mail.ucf.edu). (Please remember that any cost in seeking medical assistance is at your own expense.)

Please again accept our appreciation for your participation in this study.

APPENDIX J: PILOT STUDY APPROVAL OF HUMAN RESEARCH

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Exempt Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138
To: **Karen E. Mottarella** and Co-PI: **Emily Edwards, Shannon N. Whitten**
Date: **August 16, 2011**

Dear Researcher:

On 8/16/2011, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review: Exempt Determination
Project Title: Mock Juror Ratings of Visual Evidence
Investigator: Karen E Mottarella
IRB Number: SBE-11-07796
Funding Agency:
Grant Title:
Research ID: N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 08/16/2011 01:45:25 PM EDT

IRB Coordinator

APPENDIX K: INFORMED CONSENT

An Examination of Jury Decision Making
Informed Consent

Principal Investigator: *Karen Mottarella, Psy.D.*

Co-Investigators: *Emily Edwards, B.A., Shannon Whitten, Ph.D.*
Investigational Site(s)*: University of Central Florida*

Introduction: Researchers at the University of Central Florida (UCF) study many topics. To do this we need the help of people who agree to take part in a research study. You are being invited to take part in a research study which will include about 200 people at UCF. You have been asked to take part in this research study because you are an undergraduate student at UCF. You must be 18 years of age or older to be included in the research study. The person doing this research is Dr. Karen Mottarella. Dr. Shannon Whitten is also involved in this research along with Emily Edwards, Honors in the Major student in the UCF Psychology Department. Dr. Karen Mottarella is the faculty thesis advisor for Emily Edwards who is completing this study as part of the Honors in the Major program at the University of Central Florida.

What you should know about a research study:
• An explanation of this research study will be provided to you.
• A research study is something you volunteer for.
• Whether or not you take part is up to you.
• You should take part in this study only because you want to.
• You can choose not to take part in the research study.
• You can agree to take part now and later change your mind.
• Whatever you decide it will not be held against you.
• Feel free to ask all the questions you want before you decide.

Purpose of the research study: The purpose of this study is to examine decision making in murder trials.

What you will be asked to do in the study: Individuals participating in this study will review case materials from a recent murder case. Such materials (written, auditory, and/or visual) may be graphic in nature and therefore distressing for some individuals. Individuals participating in this study will also be asked to describe their emotions and their verdict decisions. You do not have to answer every question. You will not lose any benefits if you skip questions or tasks.

Location: All participation in this study will be conducted online.

Time required: We expect that this study will take no more than one hour to complete.

Risks: Some case materials presented throughout the study (written, auditory and/or visual) may be graphic in nature and therefore distressing for the individual. Individuals who have been victims of serious or violent crime or who whose friends or loved ones have been, may be at particular risk for distress especially when they encounter stimuli related to serious or violent crime.

The following resources are available for all UCF students who would like counseling or police assistance:
UCF Victim Services
Website: http://victimservices.ucf.edu/home.html
To make an appointment: (407) 823-2425
Confidential 24-hour Hotline: (407) 823-1200

UCF Counseling Center
Website: http://counseling.sdes.ucf.edu/
To make an appointment: (407) 823-2811
Email: councntr@mail.ucf.edu

UCF Police Department
Website: http://police.ucf.edu/
4000 Central Florida Boulevard, #150
Orlando, Florida 32816
Phone: (407) 823-5555Emergency: 911
Email: policedept@mail.ucf.edu

Compensation or payment: There is no direct compensation for taking part in this study. It is possible, however, that extra credit through SONA points may be offered for your participation. Refer to your course syllabi or speak to your instructor for information regarding their extra credit policy. Also check your syllabi or speak to your instructor for information regarding alternatives to research participation. Extra credit will be awarded through the SONA system used by the UCF Psychology Department.

Anonymous research: Your responses to all questions in this study will be anonymous. Upon

completion of the study, you will be given a code and asked to email the researcher with your name and the code. You will be providing your name only for the purposes of assigning you credit in the SONA system. You must provide your name in order to be assigned SONA credit. You do not need to provide your name if you do not want to receive SONA credit. It is important to realize that your name and the code are not connected to or associated with any of your responses or any of the data collected in this study.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints, or think the research has hurt you, talk to Dr. Karen Mottarella, Building 3 Room 226, Psychology Department, University of Central Florida Palm Bay Campus. Dr. Mottarella can be reached by phone at 321-433-7987 or by email at kmottare@mail.ucf.edu.

IRB contact about your rights in the study or to report a complaint: Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901. You may also talk to them for any of the following:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You want to talk to someone besides the research team.
- You want to get information or provide input about this research.

Withdrawing from the study: You are free to skip any questions in this research that you do not feel comfortable answering. You are also free to withdraw your participation from this research at any time. If you decide to withdraw your participation and do not complete the study, you will not receive SONA credit for your participation and your responses will not be included for analysis.

In order to continue with this study, we must obtain your consent. By checking the boxes below, you are indicating that you understand your rights and responsibilities as a participant in this study as outlined above.

[ ] I understand my rights and responsibilities as a participant in this study.

In order to continue with this study, we must verify that you are old enough to participate in this study. By checking the boxes below, you are indicating that you at least 18 years old.

[ ] I am at least 18 years of age

APPENDIX L: DEBRIEFING STATEMENT

Debriefing Statement

For the survey entitled: "An Examination of Juror Decision Making"

Dear Participant:
During this study, you were asked to review case materials from a recent murder case. You were told that the purpose of the study was to examine the influence of presentation mode on mock jurors' decisions in murder trials. The actual purpose of the study was to examine the influence of the presentation of auditory recordings and photographs on mock jurors' emotions and decisions in murder trials.

We did not tell you everything about the purpose of the study because knowledge of the true purpose may have caused bias in participants' responses and decisions.

You are reminded that your original consent document included the following information: "If you decide to leave the research or do not complete the study, you will not receive credit for your participation and your responses will not be included for analysis". If you have any concerns about your participation or the data you provided in light of this disclosure, please discuss this with us. We will be happy to provide any information we can to help answer questions you have about this study.

Now that you know the true nature of the study, you have the option of having your data removed from the study. Please be reminded that your responses in this study are de-identified and cannot be linked to you.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints, or think the research has hurt you, talk to Dr. Mottarella, Faculty Supervisor, Department psychology by email at Karen.Mottarella@ucf.edu.

IRB contact about your rights in the study or to report a complaint: Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901.

If you have experienced distress as a result of your participation in this study, the UCF Community Counseling Center is available to all students of UCF (Phone: (407)823-2811; Fax: (407)823-5415; Email: councntr@mail.ucf.edu). (Please remember that any cost in seeking medical assistance is at your own expense.)

Please again accept our appreciation for your participation in this study.

By checking "I agree" to the box below, you are certifying that you have reviewed the information above and would like to submit your responses for the study. You are also certifying that you understand that submission is entirely voluntary and that you will not lose points should you decide against doing so. Should you decide not to submit your responses in light of this new information, please check the box below entitled "I do not agree.

[ ] I agree and will be compensated for participation
[ ] I do not agree but will be compensated for participation

APPENDIX M: APPROVAL OF HUMAN RESEARCH

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138
To: **Karen E Mottarella, Emily Edwards, Shannon N Whitten**
Date: **October 25, 2011**

Dear Researcher:

On October 25, 2011, the IRB approved the following human participant research until 10/24/2012 inclusive:

Type of Review:	UCF Initial Review Submission Form Expedited Review Category #7 This approval includes a Waiver of Written Documentation of Consent and an Alteration of the Consent process
Project Title:	An Examination of Jury Decision Making
Investigator:	Karen E Mottarella
IRB Number:	SBE-11-07915
Funding Agency:	None

The Continuing Review Application must be submitted 30days prior to the expiration date for studies that were previously expedited, and 60 days prior to the expiration date for research that was previously reviewed at a convened meeting. Do not make changes to the study (i.e., protocol, methodology, consent form, personnel, site, etc.) before obtaining IRB approval. A Modification Form **cannot** be used to extend the approval period of a study. All forms may be completed and submitted online at https://iris.research.ucf.edu.

If continuing review approval is not granted before the expiration date of 10/24/2012, approval of this research expires on that date. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

Use of the approved, stamped consent document(s) is required. The new form supersedes all previous versions, which are now invalid for further use. Only approved investigators (or other approved key study personnel) may solicit consent for research participation. Participants or their representatives must receive a copy of the consent form(s).

In the conduct of this research, you are responsible to follow the requirements of the **Investigator Manual**.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., CF IRB Chair, this letter is signed by:

Signature applied by Janice Turchin on 10/25/2011 05:09:31 PM EDT

IRB Coordinator

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