Crime Scene Familiarity: Does it Influence Mock Jurors' Decisions?

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The purpose of the present studies is to examine the influence of crime scene familiarity on mock jurors' decisions. Study 1 also examines eyewitness age and number of descriptor errors. In Study 2, the type of descriptor reported and the number of descriptor errors are examined. The participants were given a trial transcript involving a robbery. No effect of eyewitness age or crime scene familiarity was observed in Study 1; however, descriptor errors were found to decrease the number of guilty verdicts for the defendant. In Study 2, when crime scene descriptors were discussed by the eyewitness, crime scene familiarity was found to be influential such that when the eyewitness was familiar with the crime scene and reported crime scene descriptors with no errors, mock jurors were more likely to render a guilty verdict compared to when there were errors. These results suggest that an eyewitness' familiarity with the crime scene does have the potential to influence mock jurors' decision-making.

Key words: age; crime scene familiarity; description; errors; eyewitness; juror decision-making; testimony.

Introduction

Crimes involving children may be more likely to occur in familiar environments, such as their home (Dauvergne & Johnson, 2001); moreover, most crimes against adolescents also seem to occur in familiar environments, such as at home or at school (Statistics Canada, 2008; US Department of Justice, 2012). Research, to date, has yet to examine whether an eyewitness who is familiar with the environment in which a crime took place influences juror decision-making. Additionally, the age of the eyewitness has been shown to be an influential factor, such that adult eyewitnesses are typically viewed more favorably than child eyewitnesses (e.g., Goodman, Golding, Helgeson, Haith, & Michelli, 1987; Pozzulo, Pettalia, Bruer, & Javaid, 2014).

However, the age of the eye witness may also interact with descriptor errors to differentially influence the verdict (Bruer & Pozzulo, 2014b). It is not unreasonable for there to be inconsistencies in eyewitness testimony, and children may make more errors, which in turn may be perceived as more problematic than an adult providing the same inconsistent testimony.

In general, previous research has shown that eyewitnesses are viewed as more reliable when no perpetrator descriptor errors are made compared to when errors are introduced into the testimony (Bruer & Pozzulo, 2014b). If an eyewitness is familiar with the environment where the crime occurred then inconsistencies may be passed off as a minor misremembering versus having a poor

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memory. Inconsistencies with unfamiliar environments may suggest that the eyewitness has a faulty memory and that his or her testimony should not be given much weight. Therefore, the purpose of this paper, divided into two studies is to examine if the eye witness' degree of familiarity with the crime scene, the age of the eyewitness (Study 1), the type of descriptors reported (Study 2), and the number of descriptor errors made (Studies 1 and 2) would influence the decision-making process of mock jurors.

Familiarity with the Crime Scene

It is important to understand how an eyewitness' level of familiarity with the environment in which the crime took place influences mock jurors' judgments. As previously mentioned, children and adolescents are often witness to crimes in familiar environments (Dauvergne & Johnson, 2001; US Department of Justice, 2012), and adolescents are more likely to become victims or eyewitnesses of crime than young adults (US Department of Justice, 2012); therefore, it is important to understand whether an adolescent is perceived more or less favorably when the crime occurred in a familiar versus an unfamiliar environment compared to a young adult. Moreover, if an eyewitness is more familiar with a crime scene then he or she may have paid more attention to the perpetrator, rather than environmental details, thus decreasing the likelihood of introducing descriptor errors into the testimony. To the authors' knowledge, no previous research has examined the influence of eyewitness' familiarity with the crime scene on mock jurors' judgments. Sharps, Janigian, Hess, and Hayward (2009) examined different factors that influence eyewitness memory for the perpetrator as well as the environment details. Around 90% of participants got at least one attribute of the surrounding environment wrong (Sharps et al., 2009). These errors could lead to a decrease in the perceived reliability of the eyewitness. While errors in the

environmental details were not examined in Study 1, it is important to examine whether or not the eyewitness' familiarity with the crime scene plays a role in how mock jurors perceive his or her reliability.

Memory may also play a role in how familiarity with a crime scene influences an eyewitness' ability to accurately recall information from the crime scene. Geva (2012) describes short-term memory as the processes that enable holding a set of stimuli for a brief interval in order to process, manipulate, or store the information for a short period of time. Short-term memory allows information to come up from sensory memory and to be retrieved from long-term memory storage. Thus, memory may play a role because an individual has knowledge about the regularities in certain environments. Another person in a familiar environment, for example, is not necessarily out of the ordinary, so a perpetrator may be overlooked due to the normalcy of the situation – or they could be scrutinized because of something abnormal, such as their behavior during the commission of a crime.

Hollingworth and Henderson (2002) demonstrate that long-term memory plays an important role in the construction and maintenance of scenes. Memory depends on how information is encoded, with one of two possible pathways: shallow processing (i.e., little attention paid) or deep processing (close attention paid; Craik & Lockhart, 1972). Although further research is required, this suggests that even though an individual is familiar with a certain location, if he or she does not pay attention to his or her surroundings then familiarity may mean very little during recall. However, if the information of the scene has been deeply processed, thus increasing familiarity, then an eyewitness may be able to pick up on something out of the ordinary and pay more attention to it compared to the location itself. By mentally blocking out all other information, the eyewitness may have the ability to harness his or her attention and focus it on a man running

away from the store that he has just robbed, for example. Additionally, because excess information about the location is not necessary, the eyewitness may have the opportunity to rehearse the information, allowing for a more accurate identification of the perpetrator. This, in turn, may increase the perceived reliability of the eyewitness' testimony and therefore may influence the mock jurors' decisions.

While there is no research known to the authors which examines how mock jurors perceive an eyewitness who is familiar with a crime scene, familiarity with and/or exposure to the defendant has been examined (e.g., Lindsay, Lim, Marando, & Cully, 1986; Pozzulo et al., 2014) and has not been found to influence mock jurors' judgments; however, familiarity with a crime scene may be perceived differently by jurors. Familiarity with the crime scene may be important for many reasons – for example, if the witness is familiar with the crime scene then he or she may more accurately remember specific details and notice that something was out of place. Bruer and Pozzulo (2014a) examined whether familiarity with a specific place (i.e., a park or a bank) influenced recall accuracy among children and adults. Both children and adults reported more information when they were recalling an environment with which they were more familiar (i.e., the park) compared to a less familiar environment; however, only children's accuracy was influenced by environment familiarity, such that children who were familiar with the environment were more accurate in their reporting compared to adults. Mock jurors may believe that an eyewitness will be more accurate in his or her testimony when he or she is familiar with the crime scene location. The eyewitness' familiarity with the crime scene in the current study was described in terms of either the eyewitness never having been to the crime location before versus having been there several times prior to the criminal event.

Eyewitness Age

Jurors may take the age of the eyewitness into account when determining the credibility of the eyewitness' testimony, which in turn could influence verdict decisions. Jurors may hold preconceived notions that child eyewitnesses do not have as good a memory as adults, which can ultimately influence how jurors perceive eyewitness credibility when rendering a verdict (e.g., Pozzulo, Lemieux, Wells, & McCuaig, 2006). For example, Goodman et al. (1987) were amongst the first to examine mock jurors' perceptions of the credibility of 6-, 10-, and 30-year-old eyewitnesses. The adult eyewitness was perceived more favorably than the child eyewitness; however, there was no influence of eyewitness age on the mock jurors' verdict decisions. Lieppe and Romanczyk (1989) found eyewitness age to be influential in mock jurors' verdicts such that fewer guilty verdicts were rendered for the defendant when only a child presented the testimony compared to only an adult. This suggests that mock jurors may be more apprehensive in determining a defendant's guilt when a child is the sole eyewitness.

The age of eyewitnesses also has been found to influence mock jurors' perceptions. While research has reliably demonstrated that child and adult eyewitnesses are perceived differently, far less research has examined how an adolescent eyewitness is perceived in comparison to an adult eyewitness. Some research has compared older children with young adults (i.e., 12-year-olds; Bruer & Pozzulo, 2014b; Pozzulo et al., 2014) and found no differences in perceived reliability. For example, Bruer and Pozzulo (2014b) examined the credibility of 4-, 12-, and 20-year-old eyewitnesses and the number of perpetrator descriptor inconsistencies in a murder trial, finding that the older eyewitness was viewed more favorably than the child eyewitness, thus supporting earlier research. Eyewitness age was also found to be influential in the jurors' perceptions of the reliability

of the eyewitness' description of the event; the event description was viewed as being significantly more reliable when the older child presented the testimony compared to the child eye witness. However, no differences in perceived credibility between older children and adults were observed, suggesting that mock jurors may perceive children above a certain age as being as reliable as adults. Similarly, Pozzulo et al. (2014) examined the credibility of 4-, 12-, and 20-year-old eyewitnesses in relation to and familiarity with the defendant and obtained similar results; there was no significant difference in the perceived reliability of the 12- and 20-year-olds.

It is important to understand whether there is an age at which an eyewitness is perceived as more credible or less credible. While previous research has examined the influence of an older child's testimony on mock jurors' decision-making, there are very few studies that examine the influence of eyewitness testimony when given by an adolescent. Adolescent eyewitnesses are an understudied group both in the eyewitness literature and the juror decision-making literature; as such, it is important to understand how adolescents are perceived by jurors, given that there is a good chance an adolescent may become either a victim or witness of a crime; more specifically, adolescents are 2.5 times more likely than adults to experience violence (US Department of Justice, 2012). Therefore, the current study examines whether a 15-year-old vs. a 25-year-old was perceived differently.

Descriptor Errors

Descriptor errors and testimonial inconsistencies can be detrimental to an eyewitness' credibility (Berman, Narby, & Cutler, 1995). Descriptor errors may arise when an eyewitness incorrectly recalls certain aspects of the perpetrator, whereas inconsistencies occur when an eyewitness gives the police a statement but then describes things differently while on the stand. The majority of research

has found that eyewitnesses who make an error in their recall of an event or perpetrator are viewed less favorably than eyewitnesses who make no errors (e.g., Berman et al., 1995; O'Neill & Pozzulo, 2012; Semmler & Brewer, 2002). It is well known that mock jurors perceive eyewitnesses who make errors in their testimony less favorably; however, there is very little research examining whether there is a certain cut-off for how many descriptor errors are too many before an eyewitness' testimony is disregarded by a juror. This threshold may also vary with the age of the eyewitnesses.

Leippe and Romanczyk (1989, Experiment 3) examined the influence of eyewitness age (6, 10, and 30 years) and whether the testimony contained inconsistent statements. The mock jurors were found to be more likely to believe that the case was stronger when there were no inconsistencies between what was initially said at the police station and what was testified to in the courtroom. The eyewitness was also viewed as more credible when there were no inconsistencies between what was said at the police station, the facts, and what was said in court. Age was only found to be influential in combination with inconsistencies for the 6-year-old eyewitness compared to the 10- and 30-year-old eyewitnesses, such that when the 6-year-old had inconsistencies in his testimony, he was viewed as less credible than when no inconsistencies were made. Leippe and Romanczyk (1989, Experiment 4) conducted a follow-up study and examined the influence of a 6-year-old vs. 30-year-old on both individual mock jurors and deliberating mock juries. Unlike Leippe and Romanczyk (1989, Experiment 3), however, no influence of testimonial inconsistencies was found for individual jurors or juries. Similarly, Lindsay et al. (1986) also found that mock jurors' verdicts were not influenced by perpetrator inconsistencies.

More recently, Bruer and Pozzulo (2014b) examined the influence of eyewitness age (4, 12, or 20 years) and the number of descriptor errors made when recalling the

perpetrator's appearance (zero, three, or six – out of nine) on mock jurors' judgments. Mock jurors' verdicts were not influenced by the age of the eyewitness or the number of descriptor errors made; however, when examining mock jurors' guilt ratings, mock jurors were more likely to assign higher ratings of guilt to the defendant when no errors were made compared to when six errors were made. Perceptions of the eyewitness were influenced by descriptor errors such that the eye witness who made no errors or three errors was perceived to be significantly more reliable than the witness who made six errors.

Previous research has reliably demonstrated that when an eyewitness' testimony contains inconsistencies or errors, mock jurors are more likely to disregard it (e.g., Berman et al., 1995; O'Neill & Pozzulo, 2012; Semmler & Brewer, 2002). The limited research on how the age of the eyewitness combines with inconsistencies to influence jurors' judgments suggests that it can combine with age such that younger witnesses who make errors are viewed less favorably than older witnesses (e.g., Leippe & Romanczyk, 1989, Experiment 3); however, other research has found that age and inconsistencies do not interact to influence jurors (e.g., Bruer & Pozzulo, 2014b).

Study 1

The purpose of this study is to examine whether the eyewitness' familiarity with the crime scene, the age of the eyewitness, and the number of descriptor errors made when describing the perpetrator are influential in mock jurors' decision-making. Based on previous research, it was predicted that there would be more guilty verdicts and higher guilt ratings for the defendant when no descriptor errors were made compared to when any number of descriptor errors were made by the eyewitness (e.g., Bruer & Pozzulo 2014b; Leippe & Romanczyk, 1989, Experiment 3). It also was predicted that as the number of descriptor errors increased,

jurors' perceptions of the credibility of the eyewitness would decrease. Familiarity with the crime scene was expected to only have an impact in the case of the adolescent eyewitness, in that it would increase jurors' perceptions of his credibility. Lastly, it was predicted that the eyewitness who was 25 years of age, made no descriptor errors, and was familiar with the crime scene would be perceived as the most credible.

Method

Participants

Undergraduate students ($n = 363$, 66.1% female) were recruited from a university in Eastern Ontario, Canada. The ages of the participants ranged from 18 to 54 years ($M = 21.07$, $SD = 5.13$). The majority of individuals identified themselves as White (60.3%), with smaller numbers of participants identifying themselves as Black (9.7%), Asian (19.2%), Latin American (2.2%), Aboriginal Canadian (1.4%), mixed origin (6.1%), or other (1.1%).

Design

A 2 (age of eyewitness: 15 vs. 25) $\times$ 2 (crime scene familiarity: familiar vs. not familiar) $\times$ 3 (number of descriptor errors: zero vs. three vs. six out of nine) between-subjects design was used. The dependent variables are: (1) dichotomous verdict, (2) continuous guilt rating, (3) perceptions of the defendant, and (4) perceptions of the eyewitness.

Materials and Procedure

Trial transcript. A total of 12 versions of a trial transcript were created, varying the age of the eyewitness, the degree of familiarity with the crime scene location, and the number of descriptor errors made by the eyewitness. All other information within the transcript was constant. Each transcript began with the judge explaining the charges and providing

instructions, along with the opening statements of the Crown and the Defense. The case presented to the participants was a fictional armed robbery where the defendant allegedly robbed a convenience store. Six witnesses provided testimony (the store clerk, a detective, the eyewitness, the defendant's friend, the defendant's girlfriend, and the defendant himself) and all were cross-examined. The Crown and the Defense both gave closing statements and the judge reminded the jurors of the law and instructed them on their duties.

Demographics form. Participants were asked to answer questions related to their age, gender, and ethnicity.

Verdict. Participants were asked to render a verdict for the defendant (charged with assault with a weapon) on both a dichotomous (*guilty* or *not guilty*) and continuous (1 = *not guilty*, 100 = *guilty*) scale. The continuous scale was incorporated to provide additional information on the mock jurors' perceptions of the defendant's guilt.

Perceptions of the defendant. Participants were asked to rate the defendant's testimony on a number of dimensions where the responses ranged from 1 (*not at all*) to 7 (*absolutely*). Specifically, each participant was asked to rate the defendant's testimony in relation to its believability, accuracy, credibility, truthfulness, and reliability.

Perceptions of the eyewitness. Participants were asked to rate the eyewitness' testimony on a number of dimensions where the responses ranged from 1 (*not at all*) to 7 (*absolutely*). Specifically, each participant was asked to rate the eyewitness' testimony in relation to its believability, accuracy, credibility, truthfulness, and reliability.

Procedure. Data were collected through the online survey tool Qualtrics. The participants were provided with the link upon signing up

for the study through an online university recruitment tool and were then randomly assigned to one of the 12 conditions. The participants read through the trial transcript and upon its completion they responded to a demographics questionnaire and then rendered both a continuous guilt rating and dichotomous verdict. Once their verdict was recorded, they were then asked to rate their perception of the defendant and the eyewitness, and answer the manipulation-check questions. Upon completion, the participants were debriefed and thanked for their participation. They received course credit for their participation.

Results and Discussion

Manipulation Check

Participants responded to five multiple-choice questions that assessed their retention of trial details, three of which asked about the age of the eyewitness, the number of descriptor errors made, and whether or not the eyewitness was familiar with the crime scene (i.e., the independent variables). A total of 529 participants completed the study, of which 18 incorrectly responded to the question regarding the eyewitness's age, 29 additional participants responded incorrectly to the question regarding the number of descriptor errors made, and a further 95 participants incorrectly responded to the question regarding whether or not the eyewitness was familiar with the crime scene. Additionally, 24 participants incorrectly responded to more than one of the questions. These 166 cases were removed from data analysis, thus resulting in a sample size of 363 participants.

Dichotomous Verdict and Continuous Guilt Ratings

Dichotomous verdict. A sequential logistic regression analysis was conducted to examine the effects of familiarity with the crime scene, eyewitness age, and number of descriptor

errors made, as well as their two-way and three-way interaction on the mock jurors' verdict decisions. Only the first model that contains the main effects is significant and was retained, $\chi^2(4) = 15.12$, $p = .004$, Nagelkerke $R^2 = .06$. There is no effect of eyewitness age or crime scene familiarity on the mock jurors' verdicts. However, there is a significant main effect of number of descriptor errors on mock jurors' verdict decisions, $Wald = 14.10$, $df = 2$, $p = .001$. Follow-up Chi-square analyses revealed that the mock jurors were more likely to render a guilty verdict when the eyewitness made no descriptor errors (.65) compared to when the eyewitness made six errors (.41), $\chi^2(1, n = 241) = 14.35$, $p < .001$, $\phi = -.24$. There are no significant differences between no errors and three errors, or between three errors and six errors.

Continuous guilt rating. A between-subjects analysis of variance (ANOVA) was conducted to determine whether the age of the eyewitness, crime scene familiarity, and the number of descriptor errors influenced mock jurors' guilt rating. Only a main effect of descriptor errors emerged, $F(2, 313) = 10.82$, $p < .001$, $\eta^2 = .07$. Tukey's post hoc analyses indicate that the mock jurors rendered significantly higher guilt ratings when the eyewitness made no descriptor errors ($M = 66.75$, $SD = 26.67$) compared to three descriptor errors ($M_{diff} = 9.50$, $SE = 3.70$, $p = .03$) and six descriptor errors ($M_{diff} = 17.42$, $SE = 3.75$, $p < .001$). There is no significant difference in guilt rating between three and six descriptor errors, and no other effects are significant.

The age of the eyewitness was not influential in the mock jurors' dichotomous or continuous guilt ratings, thus supporting previous research (e.g., Bruer & Pozzulo, 2014b; Goodman et al., 1987). This suggests that testimony from an adolescent eyewitness may be perceived as being similar to that of a young adult. Because 15-year-olds are considered to be adolescents and are significantly

older than most child eyewitnesses examined in prior studies (i.e., 4- and 6-year-olds), jurors may perceive them as more cognitively advanced than child witnesses and thus consider them to be as reliable as adults (e.g., Nuñez, Kehn, & Wright, 2010). Additionally, jurors may believe that the presence of descriptor errors, regardless of age, is enough to discredit the eyewitness.

These results also support previous research that has reliably demonstrated the detrimental effect of descriptor errors in eyewitness testimony. Unlike Bruer and Pozzulo (2014b) and Lindsay et al. (1986), but similar to Brewer and Hupfield (2004), the current study found that the number of descriptor errors did influence the mock jurors' dichotomous verdicts – more specifically, when six errors were made compared to no errors, the mock jurors were less likely to render a guilty verdict. Perhaps an eyewitness who makes six out of nine descriptor errors, thus only making three correct descriptions, bodes well for the defendant in that mock jurors' judgments are more inclined to render a not guilty verdict.

Defendant Ratings

The five questions examining mock jurors' perceptions of the defendant are significantly correlated; therefore, a composite score was created ($\alpha = .95$). An ANOVA was conducted to examine whether the age of the eyewitness, crime scene familiarity, and number of descriptor errors were influential in the mock jurors' ratings of the defendant. Only one main effect emerged: the number of descriptor errors that the eyewitness made significantly influenced how the mock jurors perceived the defendant, $F(2, 348) = 3.89$, $p = .02$, partial $\eta^2 = .02$. A Tukey's post hoc test was run to examine where the significance occurs. The mock jurors had significantly more favorable perceptions of the defendant when the eyewitness made six descriptor errors ($M = 3.75$, $SD = 1.42$) compared to when the eyewitness made no

descriptor errors ($M_{\text{diff}} = 0.52$, $SE = 0.19$, $p = .02$). Additionally, mock jurors who had more favorable perceptions of the defendant ($M = 4.45$, $SD = 1.16$) were more likely to render a not guilty verdict compared to those who had less favorable perceptions ($M = 2.61$, $SD = 1.15$), $t(355) = 15.03$, $p < .001$, $d = 1.59$. Similarly, there is a relationship between perceptions of the defendant and mock juror guilt ratings such that those who had less favorable perceptions of the defendant were more likely to assign higher guilt ratings, $r(322) = -.67$, $p < .01$. Not surprisingly, mock jurors had more favorable perceptions of the *defendant* when the eyewitness made six descriptor errors compared to no descriptor errors. These results suggest that mock jurors may be more inclined to believe a defendant's testimony when the eyewitness makes numerous errors in his or her testimony.

Eyewitness Ratings

The five questions used to examine the mock jurors' perceptions of the eyewitness are also significantly correlated; therefore, a composite score was again created ($\alpha = .91$.) An ANOVA was conducted to determine if the age of the eyewitness, familiarity with the crime scene, and the number of descriptor errors made affected the mock jurors' perceptions of the eyewitness. The number of descriptor errors made is the only variable that significantly influenced the mock jurors' perceptions of the eyewitness, $F(2, 348) = 15.28$, $p < .001$, partial $\eta^2 = .08$. A Tukey's post hoc test was run to examine where the significance occurred. The mock jurors had significantly more favorable perceptions of the eyewitness no descriptor errors were made ($M = 5.05$, $SD = 1.31$) compared to three descriptor errors ($M_{\text{diff}} = 0.38$, $SE = 0.16$, $p = .05$) and six descriptor errors ($M_{\text{diff}} = 0.89$, $SE = 0.16$, $p < .001$). Mock jurors who had more favorable perceptions of the eyewitness ($M = 5.41$, $SD = 0.94$) were more likely to render a guilty verdict compared to

those who had less favorable perceptions of the defendant ($M = 3.73$, $SD = 1.03$), $t(355) = -16.09$, $p < .001$, $d = 1.70$. There is a relationship between the mock jurors' perceptions of the eyewitness and the defendant such that as the mock jurors' perception of the eyewitness increases, their perception of the defendant decreases, $r(357) = -.47$, $p < .01$.

These results support previous research regarding how descriptor errors negatively impact perceptions of eyewitnesses (e.g., Bruer & Pozzulo, 2014b; Jones, Palmer, & Bandy, 2015). Jurors may be sensitive to the recall accuracy in the eyewitness' testimony and may use this information when evaluating his or her overall reliability. However, descriptor errors did not interact with eyewitness age to influence the mock jurors' perceptions of the eyewitness, thus suggesting that the presence of descriptor errors is enough to influence the mock jurors' judgments concerning the reliability of an eyewitness. Neither eyewitness age nor familiarity with the crime scene influenced the mock jurors' perceptions of the defendant or the eyewitness, suggesting that adolescent eyewitnesses are perceived to be as reliable as young adult eyewitnesses. Studies that have examined the integrity and reliability of children's eyewitness testimonies have found that as the age of the eyewitness increases, jurors find them to be more credible because they have developed more cognitive capabilities (Nuñez et al., 2010; Ross, Jurden, Lindsay, & Keeney, 2003). Mock jurors may also believe that the eyewitness' familiarity with the crime scene is not as important as the content of his or her testimony, especially when descriptors concerning the crime scene location are introduced.

Study 2

The results of Study 1 indicate that the number of descriptor errors made by an eyewitness when describing the perpetrator influences mock jurors' decision-making,

while eyewitness age and familiarity with the crime scene does not. Study 1 only examined perpetrator descriptors, which could be a reason why crime scene familiarity was not influential. Given that previous research has shown that eyewitnesses do make environment descriptor errors (e.g., Sharps et al., 2009), it is important to determine whether environment descriptor errors are as influential as person descriptor errors. Additional research has also found that individuals' memory for the location of an object can change if the memory trace for the object is not strong (e.g., Bridge & Voss, 2014), which can potentially lead to memory recall errors. Moreover, an eyewitness' familiarity with the crime scene may become important to mock jurors when environment descriptor errors are introduced into the testimony. Therefore, the purpose of Study 2 is to examine whether the type of descriptor errors made (perpetrator versus environment), number of descriptor errors made (zero versus three), and whether or not the eyewitness was familiar with the crime scene would influence the mock jurors' decision-making. Given that no effect of age was found in Study 1, it is not examined in Study 2.

Method

Participants

Undergraduate students ($n = 229$, 66.8% female) were recruited from a university in Eastern Ontario, Canada. The ages of the participants ranged from 18 to 47 years ($M = 20.79$, $SD = 4.74$). The majority of the individuals identified themselves as White (61.1%), with smaller numbers of participants identifying themselves as Black (7.4%), Asian (18.4%), Latin American (3.5%), Aboriginal Canadian (0.4%), mixed origin (8.3%), or other (0.4%).

Design

A 2 (type of descriptor: perpetrator vs. environment) $\times$ 2 (crime scene familiarity:

familiar vs. not familiar) $\times$ 2 (number of descriptor errors: zero vs. three) between-subjects design was used. The dependent variables are: (1) dichotomous verdict, (2) continuous guilt rating, (3) perceptions of the defendant, and (4) perceptions of the eyewitness.

Materials and Procedure

The materials and procedure for Study 2 are identical to those of Study 1, with the exception of the new independent variables (i.e., crime scene familiarity, type of descriptor, and the presence of descriptor errors).

Results and Discussion

Manipulation Check

The participants responded to five multiple-choice questions that assessed their retention of trial details, three of which asked about the type of descriptors reported, the number of descriptor errors made, and whether or not the eyewitness was familiar with the crime scene (i.e., the independent variables). A total of 349 participants completed the study, of which 8 responded incorrectly to the question regarding the number of descriptor errors made, a further 48 responded incorrectly to the question regarding whether or not the eyewitness was familiar with the crime scene, and an additional 47 responded incorrectly to the question regarding the type of descriptors reported. Additionally, 17 participants responded incorrectly to more than one question. These 120 cases were removed from data analysis, thus resulting in the sample size of 229.

Dichotomous Verdict and Continuous Guilt Ratings

A sequential logistic regression was run with the dichotomous verdict (guilty or not guilty) as the dependent variable and type of descriptor, presence of descriptor errors, and crime

scene familiarity as the independent variables. The first model, including only the main effects, is significant, $\chi^2(3) = 11.37, p = .01$, Nagelkerke $R^2 = .07$. The second model, including the main effects and two-way interactions, is also significant, $\chi^2(6) = 16.57, p = .01$, Nagelkerke $R^2 = .09$. Lastly, the third model, which includes the main effects, two-way interactions, and three-way interaction, is also significant, $\chi^2(7) = 27.24, p < .001$, Nagelkerke $R^2 = .15$. There is a significant interaction between familiarity with the crime scene and type of descriptors reported, $B = -2.45, SE = 1.09, p = .02$; however, follow-up Chi-square analyses revealed no significant differences in guilty verdicts. The mock jurors assigned more guilty verdicts to the defendant when the witness was familiar with the crime scene and reported perpetrator descriptors (.54) compared to crime scene descriptors (.38), $\chi^2(1, n = 114) = 2.95, p = .09$. There is also a significant interaction between familiarity with the crime scene and the presence of descriptor errors, $B = -1.56, SE = 0.60, p = .009$. Follow-up Chi-square analyses indicated that the mock jurors were more likely to render a guilty verdict when the eyewitness was familiar with the crime scene and no errors were made during testimony (.60) compared to when errors were present (.31), $\chi^2(1, n = 114) = 9.29, p = .002, \phi = -.29$. No differences in verdict were observed when the eyewitness was not familiar with the crime scene. There is also a significant interaction between the type of descriptor reported and whether or not errors were present in the description, $B = -1.63, SE = 0.62, p = .009$. Follow-up Chi-square analyses revealed that when the eye witness reported descriptors of the perpetrator and no errors were made, mock jurors were more likely to render a guilty verdict (.67) compared to when errors were present (.37), $\chi^2(1, n = 114) = 10.25, p = .001, \phi = -.30$. No significant differences were observed when crime scene descriptors were reported.

These significant two-way interactions may be overshadowed by a three-way

interaction between familiarity with the crime scene, type of descriptors, and the presence of errors, $B = 1.24, SE = 0.39, p = .001$. Follow-up Chi-square analyses revealed that when the eyewitness was familiar with the crime scene and reported crime scene descriptors with no errors, mock jurors were more likely to render a guilty verdict (.57) compared to when errors were present (.16), $\chi^2(1, n = 55) = 9.55, p = .002, \phi = -.42$. No significant differences were observed when the eyewitness was familiar with the crime scene and reported perpetrator descriptors. Moreover, when the eyewitness was not familiar with the crime scene and reported perpetrator descriptors with no errors, mock jurors were more likely to render a guilty verdict (.72) compared to when errors were present (.30), $\chi^2(1, n = 55) = 9.63, p = .002, \phi = -.42$.

An ANOVA was conducted to examine whether the eye witness' familiarity with the crime scene, type of descriptors reported, and the presence of errors influenced mock jurors' continuous guilt ratings. A significant effect of the presence of errors was found, $F(1, 219) = 17.04, p < .001$, partial $\eta^2 = .07$. Mock jurors were more likely to assign higher guilt ratings to the defendant when there were no errors present ($M = 62.02, SD = 26.49$) compared to when errors were present ($M = 48.05, SD = 26.89$). There is also a significant three-way interaction between the eye witness' familiarity with the crime scene, the type of descriptors reported, and whether or not errors were present, $F(1, 219) = 4.07, p = .05$, partial $\eta^2 = .02$. Follow-up analyses revealed that when the eye witness was familiar with the crime scene and reported perpetrator descriptors, mock jurors were more likely to assign higher guilt ratings to the defendant when no errors were made ($M = 68.03, SD = 27.83$) compared to when errors were made ($M = 52.76, SD = 23.57$), $t(57) = 2.27, p = .03, d = 0.59$. Similarly, mock jurors were also more likely to assign higher guilt ratings to the defendant when the eye witness was familiar with the crime scene

and reported crime scene descriptors with no errors made ($M = 58.43$, $SD = 27.18$) compared to when errors were made ($M = 38.04$, $SD = 25.85$), $t(52) = 2.80$, $p = .007$, $d = 0.77$. When the eye witness was not familiar with the crime scene and reported perpetrator descriptors, mock jurors were more likely to assign higher guilt ratings to the defendant when no errors were made ($M = 66.69$, $SD = 18.31$) compared to when errors were made ($M = 44.03$, $SD = 24.04$), $t(54) = 3.92$, $p < .001$, $d = 1.06$. No significant differences were observed when the eye witness was not familiar with the crime scene and reported crime scene descriptors.

The eyewitness' familiarity with the crime scene was found to influence mock jurors' decision-making when crime scene descriptors were reported. When the eye witness was familiar with the crime scene and reported a completely accurate description of the crime scene, mock jurors were more likely to reach a guilty verdict. Conversely, when the eyewitness was not familiar with the crime scene, perpetrator descriptors appeared to have a greater influence on mock jurors' decision-making. Similar results were obtained when examining the mock jurors' continuous guilt ratings.

Defendant Ratings

An ANOVA was conducted to examine whether the eye witness' familiarity with the crime scene, type of descriptors reported, and the presence of errors influenced mock jurors' perceptions of the defendant ($\alpha = .95$). Only the presence of errors was significant, $F(1, 217) = 4.48$, $p = .04$, partial $\eta^2 = .02$. Mock jurors held more favorable perceptions of the defendant when the eyewitness made three descriptor errors ($M = 3.79$, $SD = 1.25$) compared to no errors ($M = 3.43$, $SD = 1.44$). The remaining effects were not significant suggesting that an eyewitness' familiarity with the crime scene and type of descriptors reported does not influence mock jurors' perceptions of the defendant.

Eyewitness Ratings

An ANOVA was conducted to examine whether the eye witness' familiarity with the crime scene, type of descriptors reported, and the presence of errors influenced the mock jurors' perceptions of the eyewitness ($\alpha = .93$). The mock jurors were significantly influenced by the type of descriptor reported such that the eyewitness was perceived more favorably when descriptors of the perpetrator were reported ($M = 4.67$, $SD = 1.23$) compared to descriptors of the crime scene ($M = 4.27$, $SD = 1.40$), $F(1, 213) = 5.78$, $p = .02$, partial $\eta^2 = .03$. Additionally, mock jurors viewed the eye witness more favorably when no errors were made ($M = 4.68$, $SD = 1.43$) compared to the presence of errors ($M = 4.26$, $SD = 1.19$), $F(1, 213) = 6.38$, $p = .01$, partial $\eta^2 = .03$. However, these results may be overshadowed by a significant interaction between type of descriptor reported and the eye witness' familiarity with the crime scene, $F(1, 213) = 4.67$, $p = .03$, partial $\eta^2 = .02$. When the eye witness was familiar with the crime scene and reported descriptors of the perpetrator, the mock jurors' perception of the eye witness was more favorable ($M = 4.85$, $SD = 1.21$) compared to when crime scene descriptors were reported ($M = 4.07$, $SD = 1.40$), $t(108) = 3.13$, $p = .002$, $d = 0.60$. No significant differences were observed when the witness was not familiar with the crime scene.

The main effects and two-way interaction must be qualified by the significant three-way interaction between the eye witness' familiarity with the crime scene, the type of descriptor reported, and whether or not there were errors in the eye witness' testimony, $F(1, 213) = 3.90$, $p = .05$, partial $\eta^2 = .02$. When the eyewitness was familiar with the crime scene and made no errors relating to the crime scene while giving testimony, the mock jurors' perception of the eye witness was more favorable ($M = 4.47$, $SD = 1.48$) compared to when errors were made ($M = 3.65$, $SD = 1.19$), $t(50) = 2.18$, $p = .03$, $d = 0.61$. No significant differences were observed

when the eye witness was familiar with the crime scene and reported perpetrator descriptors. When the eye witness was not familiar with the crime scene and reported perpetrator descriptors, the mock jurors' perception of the eye witness was more favorable when perpetrator descriptors were reported ($M = 4.86$, $SD = 1.12$) compared to when crime scene descriptors were reported ($M = 4.11$, $SD = 1.24$), $t(52) = 2.31$, $p = .03$, $d = 0.63$. No significant differences were observed when crime scene descriptors were reported. Overall, the mock jurors perceived the eyewitness more favorably when descriptors of the perpetrator were reported compared to descriptors of the crime scene. This was also the case when the eye witness was both familiar and unfamiliar with the crime scene.

General Discussion

The purpose of the present studies is to examine whether an eyewitness' familiarity with the crime scene, the age of the eyewitness, the type of descriptors reported, and the number of descriptor errors made would influence mock jurors' decision-making concerning a robbery case. It is important to understand how various eyewitness characteristics influence mock jurors' judgments, as eyewitness testimony holds considerable weight when jurors make their decisions (Brewer & Wells, 2011). Familiarity with the crime scene had yet to be examined in the context of juror decision-making; therefore, it was important to examine whether it influences mock jurors' decision-making processes. It was also important to examine how adolescent eyewitnesses are perceived in direct comparison to young adult eyewitnesses, as the adolescent population is one which is most frequently exposed to crime (US Department of Justice, 2012).

Defendant Guilt

To the authors' knowledge, these are the first studies to examine how familiarity with a

crime scene influences mock jurors' judgments – as such, the current studies had exploratory hypotheses concerning crime scene familiarity. There was no influence of familiarity with the crime scene on mock jurors' judgments in either study. This phenomenon may be explained using schemas – that is, a general knowledge of what is involved in a given experience. Regardless of whether or not an individual has previously visited the exact location of the crime scene, they have most likely come across a similar environment and therefore have a preconceived idea of what the area should look like. For example, the parking lot of a convenience store was used in the current study, and although the eyewitness may not have been to this particular lot before, it is similar to many of the other convenience store parking lots that the eyewitness has doubtlessly visited in the past. Therefore, familiarity with the crime scene may not be relevant or influential in an eyewitness' testimony, given such a generic location.

The age of the eyewitness was not found to be influential in the mock jurors' dichotomous or continuous guilt ratings, thus supporting previous research. Given that adolescents are perceived to be more cognitively advanced than children (e.g., Nuñez et al., 2010), the mock jurors may have viewed the adolescent and young adult eyewitnesses as being equally reliable. Additionally, age may become irrelevant when the witness introduces descriptor errors into testimony.

The number of perpetrator descriptor errors in the eyewitness' testimony was highly influential in mock jurors' dichotomous verdicts, as well as their continuous guilt ratings in Study 1, thus supporting the hypothesis. When the eyewitness made six descriptor errors, the mock jurors were more likely to vote guilty for the defendant compared to when no descriptor errors were made; these results support previous research that has reliably demonstrated the detrimental effect of descriptor errors in eyewitness

testimony (e.g., Berman et al., 1995; Semmler & Brewer, 2002). Research examining the presence of descriptor errors and its influence on dichotomous verdicts is somewhat contradictory, as some research has found no effect (e.g., Bruer & Pozzulo, 2014b; Lindsay et al., 1986) while other research has found an effect (e.g., Brewer & Hupfeld, 2004). The current study adds to the literature that has found an effect such that the presence of descriptor errors did influence the mock jurors' dichotomous verdicts. Perhaps an eyewitness who makes six out of nine descriptor errors, thus only making three correct descriptions, holds enough weight in mock jurors' judgments to sway them into rendering a not guilty verdict. In Study 2, just three descriptor errors compared to no errors was enough for mock jurors to assign higher guilt ratings to the defendant. The results of the current studies suggest that mock jurors may be less inclined to believe that the defendant is guilty when 33% of the witness' testimony includes descriptor errors, and even less likely when the testimony includes 66%.

Study 1 found no combined influence of eyewitness age, descriptor errors, or familiarity with the crime scene on mock jurors' judgments. Similar to Bruer and Pozzulo (2014b), Study 1 found no combined influence of eyewitness age and descriptor errors on mock jurors' dichotomous verdicts or their continuous guilt ratings. While previous research has found that eyewitness age and descriptor inconsistencies can combine to influence mock jurors' judgments (e.g., Leippe & Romanczyk, 1989), this only held true for a child witness (i.e., a 6-year-old); there was no combined influence for the 10- and 30-year-olds who also featured in the study in question. However, when the presence of crime scene descriptors was introduced in Study 2, familiarity with the crime scene became influential. While more studies are needed to examine the influence of an eyewitness' familiarity with the crime scene, these preliminary findings suggest that when a witness describes the scene of a crime, his

or her familiarity with that location may play a role in juror decision-making. As found in the current study, an eyewitness who states that he or she is familiar with the crime scene and makes no errors when reporting on it is more likely to be viewed positively in the eyes of a juror. This also could extend to identification accuracy; if a juror learns that the eye witness accurately described the crime scene, then he or she also may be inclined to believe that the identification of the alleged perpetrator is also accurate.

Mock Juror Perceptions of the Eyewitness and the Defendant

The mock jurors held significantly more favorable perceptions of the eyewitness when no descriptor errors were made, supporting previous research regarding how descriptor errors negatively impact on jurors' perception of eyewitnesses (e.g., Bruer & Pozzulo, 2014b; Jones et al., 2015). Jurors may be sensitive to the recall accuracy of an eyewitness' testimony and may use this information when evaluating the overall reliability of the eyewitness. Also similar to previous research, descriptor errors did not combine with eyewitness age in Study 1 to influence jurors' perceptions of the eyewitness, thus suggesting that the presence of descriptor errors is enough to influence mock jurors' judgments concerning the reliability of an eyewitness.

Neither eyewitness age nor familiarity with the crime scene influenced the mock jurors' perceptions of the eyewitness in Study 1, suggesting that adolescent eyewitnesses are perceived to be as reliable as young adult eyewitnesses. Studies that have examined the integrity and reliability of children's eyewitness testimony have found that as the eyewitness age increases, jurors find them to be more credible because they have developed more cognitive capabilities (Nuñez et al., 2010; Ross et al., 2003). Mock jurors may also believe that the eyewitness' familiarity with the crime scene is not as important as the content of his or her testimony when

descriptors of the crime scene are not discussed. For example, in Study 2, when the witness was familiar with the crime scene, the mock jurors' perception of the witness was more favorable than when the perpetrator was described compared to the crime scene. Additionally, when the witness was familiar with the crime scene and made no errors describing it, the mock jurors' perception of the eye witness was more favorable than when errors were made.

Limitations

A common limitation among juror decision-making studies is that written trial transcripts are used in comparison to live, or recorded, trial simulations. While this does raise the issue of ecological validity, Bornstein (1999) found no differences in juror decision-making based on the trial medium. Furthermore, while having a sample of only university students may also cause problems for generalizability to the greater population and the community, research has shown that the results from a student sample can still be useful and informative, and can produce similar results to those of a community sample (Bornstein, 1999).

The current studies also utilized an online data collection method which has been shown to be a suitable alternative to that of in-lab research (Riva, Teruzzi, & Anolli, 2003). However, this may also be the reason underlying the high rate of manipulation check failures; while online studies are quicker, they also bring with them the potential for participants to not attend to the information as closely as they would if they were being monitored by the researchers in a controlled environment.

Conclusion

These studies have examined the influence of an eyewitness' familiarity with a crime scene on mock jurors' judgments. Familiarity with the crime scene does not appear to have been

influential in the mock jurors' perceptions of the defendant's guilt or their perceptions of the eyewitness when only described descriptors of the perpetrator were given. However, when a witness describes a crime scene to an investigator, the importance of his or her familiarity with it may be of importance, because when no errors are made and the witness is familiar with the crime scene, mock jurors may be more inclined to believe the testimony and thus believe the identification of the perpetrator to be accurate. Additionally, as supported by previous research, the number of descriptor errors impacted the mock jurors' judgments concerning the defendant's guilt (both dichotomous and continuous) as well as their perceptions of the defendant and the eyewitness. Eyewitness age however was not found to be influential in the mock jurors' judgments, suggesting that adolescent and adult eyewitnesses may be perceived similarly in terms of their reliability. Future research is needed to examine whether this holds true across different types of crime.

References

- Berman, G. L., Narby, D. J., & Cutler, B. L. (1995). Effects of inconsistent eyewitness statements on mock-jurors' evaluations of the eyewitness, perceptions of defendant culpability and verdicts. *Law and Human Behavior, 19*, 79–88. doi:10.1037/0021-9010.19.1.79
- Bornstein, B. H. (1999). The ecological validity of jury simulations: Is the jury still out? *Law and Human Behavior, 23*, 75–91. doi:10.1023/A:1022326807441
- Brewer, N., & Hupfeld, R.M. (2004). Effects of testimonial inconsistencies and witness group identity on mock-juror judgments. *Journal of Applied Social Psychology, 34*, 493–513. doi:10.1111/j.1559-1816.2004.tb02558.x
- Brewer, N., & Wells, G. L. (2011). Eyewitness identification. *Current Directions in Psychological Science, 20*, 24–27. doi:10.1177/0963721410389169
- Bridge, D.J., & Voss, J.L. (2014). Hippocampal binding of novel information with dominant traces can support both memory stability and change. *The Journal of Neuroscience, 34*, 2203–2213. doi: 10.1523/JNEUROSCI.3819-13.2014

- Bruer, K., & Pozzulo, J. (2014a). Familiarity and recall memory for environments: A comparison of children and adults. *Journal of Applied Developmental Psychology*, 35, 318–325.
- Bruer, K., & Pozzulo, J. (2014b). Influence of eye-witness age and recall error on mock juror decision making. *Legal and Criminological Psychology*, (19), 332–348.
- Craik, F.I.M., & Lockhard, R.S. (1972). Level of processing: A framework for memory research. *Journal of Verbal Learning and Learning Behavior*, 11, 671–684. doi: 10.1016/S0022-5371(72)80001-x
- Dauvergne, M., & Johnson, H. (2001). *Children witnessing family violence*. Retrieved from <http://publications.gc.ca/Collection-R/Statcan/85-002-XIE/0060185-002-XIE.pdf>
- Geva, R. (2012). Short-term memory. In S. Norbert (Ed.), *Encyclopedia of the sciences of learning* (pp. 3058–3061). New York, NY: Springer.
- Goodman, G. S., Golding, J. M., Helgeson, V. S., Haith, M. M., & Michelli, J. (1987). When a child takes the stand: Jurors' perceptions of children's eyewitness testimony. *Law and Human Behavior*, 11(1), 27–40. doi:10.1007/BF01044837
- Hollingworth, A., & Henderson, J. M. (2002). Accurate visual memory for previously attended objects in natural scenes. *Journal of Experimental Psychology: Human Perception and Performance*, 28(1), 113–136. doi:10.1037/0096-1523.28.1.113
- Jones, E.E., Palmer Jr., P., & Bandy, A. (2015). The effect of inconsistency on evaluations of a second eyewitness: It depends on who testifies first. *Psychiatry, Psychology, and Law*, 22, 814–829. doi: 10.1080/13218719.2015.1015205
- Leippe, M. R., & Romanczyk, A. (1989). Reactions to child (versus adult) eyewitnesses: The influence of jurors' preconceptions and witness behavior. *Law and Human Behavior*, 13 (2), 103–132. doi:10.1007/BF01055919
- Lindsay, R.C.L., Lim, R., Marando, L., & Cully, D. (1986). Mock-juror evaluations of eyewitness testimony: A test of metamemory hypotheses. *Journal of Applied Social Psychology*, 16, 447–459. doi: 10.1111/j.1559-1816.1986.tb01151.x
- Núñez, N., Kehn, A., & Wright, D. B. (2010). When children are witnesses: The effects of context, age and gender on adults' perceptions of cognitive ability and honesty. *Applied Cognitive Psychology*, 24, 1–15. doi:10.1002/acp
- O'Neill, M. C., & Pozzulo, J. D. (2012). Jurors' judgments across multiple identifications and descriptions and descriptor inconsistencies. *American Journal of Forensic Psychology*, 30 (2), 39–66.
- Pozzulo, J. D., Lemieux, J. M. T., Wells, E., & McCuaig, H. J. (2006). The influence of eye-witness identification decisions and age of witness on jurors' verdicts and perceptions of reliability. *Psychology, Crime & Law*, 12, 641–652. doi:10.1080/10683160500415539
- Pozzulo, J. D., Pettalia, J. L., Bruer, K., & Javaid, S. (2014). Eyewitness age and familiarity with the defendant: Influential factors in mock jurors' assessments of defendant guilt? *American Journal of Forensic Psychology*, 32, 39–51.
- Riva, G., Teruzzi, T., & Anolli, L. (2003). The use of the internet in psychological research: Comparison of online and offline questionnaires. *CyberPsychology & Behavior*, 6, 73–80. doi:10.1089/109493103321167983
- Ross, D. F., Jurden, F. H., Lindsay, R. C. L., & Keeney, J. M. (2003). Replications and limitations of a two-factor model of child witness credibility. *Journal of Applied Social Psychology*, 33(2), 418–430. doi:10.1111/j.1559-1816.2003.tb01903.x
- Semmler, C., & Brewer, N. (2002). Effects of mood and emotion on juror processing and judgments. *Behavioral Sciences & the Law*, 20 (4), 423–436. doi:10.1002/bsl.502
- Sharps, M., Janigian, J., Hess, A., & Hayward, B. (2009). Eyewitness memory in context: Toward a taxonomy of eyewitness error. *Journal of Police and Criminal Psychology*, 24, 36–44 doi: 10.1007/s11896-008-9029-4
- Statistics Canada. (2008). *Children and Youth*. Retrieved from <http://www.statcan.gc.ca/pub/11-402-x/2008000/pdf/children-enfants-eng.pdf>
- US Department of Justice. (2012). *Violent crime against youth, 2004-2010* (NCJ 240106). Retrieved from <http://www.bjs.gov/content/pub/pdf/vcay9410.pdf>