Eyewitness factors influencing the mock juror decision-making process: Age, familiarity, and

social support

by

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Abstract

Mock jurors ($N = 281$) read a trial transcript of an armed robbery at a convenience store. The transcripts varied by eyewitness age (10, vs. 15, vs. 20- years-old), degree of witness-perpetrator interaction (i.e. *familiarity*), and the degree of social support experienced by the witness during the crime (demonstrated through the presence/absence of a supportive figure such as a mother (i.e. high vs. low social support). The influence of these variables on jurors' perceptions of eyewitness' credibility, reliability, and accuracy as well as the decision of defendant's guilt, were investigated. The presence of social support influenced jurors' decisions regarding the defendant's guilt, where jurors in the low social support condition (i.e. alone) compared to the high social support condition (i.e. with mother) were nearly twice as likely to conclude that the defendant was not guilty. No significant group differences were found among the other factors; namely, eyewitness age and familiarity.

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Table of contents

List of tables

List of Appendices

Eye-witness factors influencing the mock juror decision-making process: Age, familiarity, and

social support

In May 2014, a local supermarket in Auckland, New Zealand was robbed in broad

daylight by three men armed with weapons, two of the men approached the cashier while the

third went to the back of the store. The perpetrators stole cash as well as personal jewelry items

from the victim. Among the witnesses to the crime were three primary school children who

witnessed the robbery as they were instructed to sit on the floor and be silent (New Zealand

Police, 2014). A review by the US Department of Justice (2009) stated that 24.6% of children

and adolescents (less than 17-years-old) reported that they were victims of robbery, vandalism,

or theft. These child eyewitnesses may or may not have been alone when these crimes occur

(Finkelhor, 2009).

Roughly 6% of all robberies in the United States that are reported to the police, occur in a

convenience store (Altizio & York, 2007). The targeting of convenience stores has been

consistent over the past 30 years and has appeared to be appealing to robbers due to their lack of

security, large cash amounts in the register, minimal staff, and the likeliness of the customers'

compliance (Catalano, Hill, & Long, 2001). Two common methods of operation from the

criminal have been identified by researchers. The robber would either initiate the offense upon

entering the store or he/she would engage in the 'act' of making a purchase (where he/she may

even interact with customers) prior to approaching the register to commit to the offense. These

methods are known as the straight or customer method, respectively (Faulkner, Landsittel, &

Hendricks, 2001).

It is possible that robbers who engage in the 'customer' method of robbery could have

interacted with child shoppers while 'acting' as harmless customers. In these situations, although

the parent may or may not be present, the child-witness could hold unique and vital information about the perpetrator. The Supreme Court of Canada considers the evidence of a child-witness on a case-by-case basis, where the child's ability and level of development is taken into consideration prior to their testimony (*R. v R.W.*, 1992).

It is the jurors' responsibility to assess the reliability of the evidence and they are often required to weigh in on the veracity of eyewitness testimonies (Van Wallendael, Cutler, Devenport, & Penrod, 2007). Given children are at times asked to testify, it is vital to understand how jurors' decisions are influenced by certain eyewitness factors such as age. Additional factors that may influence the decision-making process but have not been thoroughly studied are the witness' familiarity with the perpetrator and his/her interaction with the perpetrator. The current study will investigate how an eyewitness's age and their level of familiarity with the perpetrator as well as their interaction at the time of the crime influences the jurors' perceptions of the eyewitness' credibility, accuracy, reliability, and the decision of defendant's guilt.

Age of Eyewitness

The age of the eyewitness may be an influential factor in the juror decision-making process (Eaton, Ball, & O'Callaghan, 2001). Although some studies have found no impact of eyewitness age on verdict decisions (Pozzulo & Dempsey, 2009; Bruer & Pozzulo, 2014), others have found that the age of the eyewitness may influence how jurors perceive the credibility of the eyewitness' testimony (Brimacombe, Quinton, Nance, & Garrioch, 1997; Goodman, Golding, Helgeson, Haith, & Michelli, 1987; Ross, Dunning, Toglia, & Ceci, 1990). In order to better understand these mixed findings, it is important to identify the underlying factors that may weigh into the juror decision-making process when younger witnesses take the stand. The

present study manipulated the age (10-, 15-, 20- years-old) of the eyewitness in order to explore the potential discrepancies in jurors' perceptions as a function of age.

Credibility and reliability judgements regarding children's eyewitness testimony appear to be sensitive to various factors such as context and identification decisions (Nunez, Kehn, & Wright, 2011; Pozzulo, Lemieux, Wells, & McCuaig, 2006). Credibility refers to the quality of being worthy of trust and reliability refers to the ability to of a person to be relied on or depended on. Researchers have adopted opposing perspectives concerning jurors' beliefs and stereotypes around the credibility of children's eyewitness testimonies (Goodman, Bottoms, Herscovici, & Shaver, 1989). In order to holistically explain the differences in opinions, the makeup of an eyewitness' credibility must be examined. An eyewitness' credibility is determined by two core constructs, (1) cognitive competence defined as "the ability of successfully and efficiently accomplishing a task"; and (2) trustworthiness defined as "the quality of an individual that incites reliability" (Goodman, 1984). Researchers posit that age is a sensitive factor in which these two constructs differ with older and younger witnesses (Miller & Burgoon, 1982). Younger witnesses (i.e. 5 to 10- year-olds) have been deemed as highly suggestible and less competent by some jurors and thus their memories of the events have been considered to be less accurate (Leippe, Brigham, Cousins, & Romanczyk, 1989; Leippe & Romanczyk, 1987; Yarmey & Jones, 1983). This perspective can in turn diminish the child's position in a trial (Leippe & Romanczyk, 1989, Studies 2 and 3). However, some jurors have argued that children are more honest and naïve when compared to adults and therefore deliver more reliable testimonies. This opinion is thought to be dependent on the type of crime that the child witnessed (Bottoms & Goodman, 1994).

Ross and colleagues (1989) surveyed people's perceptions of eyewitnesses varying in age and found support for the notion that cognitive competence and trustworthiness each played an independent role in shaping people's perceptions. Younger children (i.e. 6-year-olds) were perceived as less accurate than older children (i.e. 8-year-olds) or adults but more honest than their older counterparts with exception to older adults (i.e. elderly). Further, additional support for the belief that child witnesses are less accurate comes from survey research (Kassin, Ellsworth, & Smith, 1989; Kassin, Tubb, Hosch, & Memon, 2001) and post-diction experiments (where the data obtained from a prior experiment was used and further analyzed/scored by new participants – creating another layer to the study; Leippe, Manion, Romanczyk, 1992) suggests that adults hold negative stereotypes of children's memory abilities.

Ross and colleagues (1990) conducted a survey in order to uncover potential stereotypes regarding age and credibility held by adults. Participants were told to consider the average 6-, 8-, 21-, or 74- year-old eyewitness and assign ratings to each witness based on how they perceived the accuracy of the witness' testimony, the witness' susceptibility to suggestibility (i.e. the quality of being likely to go along with the proposals of others), the witness' honesty, and overall the amount of consideration that should be given to their testimony. Participants rated the child eyewitness as 'likely to be less accurate in their testimony' and 'more susceptible to suggestibility' than older eyewitnesses. Further, their testimonies were given less consideration overall. These findings suggest that negative stereotypes do exist among jurors regarding child eyewitnesses.

The present study sought to investigate whether these stereotypes exist in jurors as well as examined the factors that influence jurors' perceptions of children. This investigation was carried out using two different perspectives. The first perspective outlines the jurors' tendencies

JUROR DECISION-MAKING PROCESS   13

to factor in the type of crime the child witnessed when examining the credibility of their

testimonies (McCauley & Parker, 2001). The second perspective dives into the notion that the

child eyewitness' involvement during the crime is what jurors' factor in when examining the

witness' credibility (Pozzulo & Dempsey, 2009), laying the groundwork for a variable that was

examined in this study, eyewitness' interaction with the perpetrator (or familiarity with the

perpetrator). The two perspectives will be critically examined to further support the use of the

studied variable (i.e. familiarity) and the crime chosen for the study.

For instance, the notion that jurors perceive children as more naïve and honest and

therefore more reliable in their testimonies was thought to stem from the type of crime that the

child witnessed. As suggested by some, jurors may have a positive bias towards younger

eyewitnesses for certain types of crimes (McCauley & Parker, 2001). In cases that do not involve

drugs or sexual abuse, younger children may be perceived as less credible. Specifically, the

literature suggests that the jurors of crimes involving robbery murder, medical malpractices, and

vehicular homicide often perceive younger eyewitnesses as less credible than their older

counterparts (McCauley & Parker, 2001). Researchers suggest that when jurors assess the

credibility of children's eyewitness testimony regarding these crimes, they may be prone to

seeing children as capable of fabricating narratives regarding robbery due to its prevalence in

popular culture (McCauley & Parker, 2001). Alternatively, other researchers suggest that the

child's involvement in the crime, rather than the type of crime, is a factor considered by jurors

when making their judgements (Pozzulo & Dempsey, 2009). The latter perspective, jurors'

tendency to weigh the child's interaction in the crime rather than the type of crime, was focused

on in the present study due to the following analysis of the literature.

Although some studies successfully found a difference in jurors' perceptions of young eyewitnesses due to the type of crime that they witnessed, the majority overlooked the possibility that the difference in jurors' perceptions could have been attributed to another factor: the involvement of the eyewitness in the crime. These studies, for instance, examined various types of crimes and found support for the notion that younger eyewitnesses were viewed as more credible when testifying in cases such as a drug-possession and less credible when testifying in cases such as a robbery, but were inconsistent in depicting the role and involvement of the eyewitness across the scenarios (Goodman et al., 1987; McCauley & Parker, 2001; Ross et al., 1990). Each study presented mock jurors with eyewitness testimonies that varied in type of crime witnessed (the studied variable), and, presumably unintentionally, the testimonies also varied in the eyewitness' involvement in the crime (expanded on in the next few sections). It is possible that this acted as a confounding variable and that the jurors were swayed by the eyewitness' involvement in the crime and not the type of crime. Some researchers for instance, identified that child-bystander-witnesses, compared to victim-witnesses, were viewed as less credible than adult-bystander-witnesses (Pozzulo & Dempsey, 2009).

In past literature, 'bystander' has been defined as: "an individual who observed the event but who was not directly involved in the crime" (Pozzulo & Dempsey, 2009, pp 924). 'Victim' has been defined as: an individual who was involved in some way in the crime scene (i.e. attacked by the perpetrator during the criminal incident). The present study is unique as the eyewitness is more involved than a typical bystander who simply observed the crime but less involved than a victim who is targeted during the crime. To hone in on the mock jurors' specific perception of the eyewitness, the present study will define the witness as a bystander who is somewhat familiar with the perpetrator (via interaction), thus distinguishing them from being

'just a bystander' as well as a 'victim'. In order to hypothesize the reaction of the mock jurors' in this study, the literature for both situations in which the eyewitness was a bystander to the crime or a victim, was examined. Further, the following studies also illustrate the differences in bystander eyewitness involvement as well as offer an alternate explanation to the 'type of crime' justification posited by researchers such as McCauley and Parker (2001).

Goodman and colleagues (1987) conducted three juror decision-making experiments where the eyewitness was a *bystander* to various types of crimes. Experiments 1 and 3 involved a vehicular-homicide, while Experiment 2 involved a murder. Across all three experiments the eyewitness' age was either 6-, 10-, or 30 and the eyewitness had simply observed the crime in each scenario. The only difference between the procedures of Experiments 1 and 3 was that the mock jurors in Experiment 3 were solicited through means such as newspaper ads (in order to gather a more representative sample) rather than the undergraduate mock jurors used in the first two experiments. In Experiments 1 and 2, as the age of the eyewitnesses increased, participants rated their respective testimonies as more credible. In Experiment 3, the child eyewitnesses (i.e. 6- and 10- years-old) were rated as less credible than the adult eyewitness (i.e. 30-years-old). Across the three experiments, younger eyewitnesses were rated as less credible than older eyewitnesses. In the current study, the witness is present during an armed robbery. The aforementioned research suggests that the nature of a robbery crime may raise particular preconceived notions from the mock jurors, where younger witnesses may evoke negative feedback from mock jurors regarding credibility. However, although these findings are in-line with research suggesting that there are types of crimes where the perception of a younger witness' credibility is jeopardized (McCauley & Parker, 2001), it should be noted that the eyewitness of the Goodman and colleagues (1987) study was a bystander who simply observed

the crime (i.e. as a third party), whereas the eyewitness in the present study partakes in a more substantial role during the crime scene. Thus, the lack of credibility attributed to the young witness' testimony could be due to their role as a bystander and not the crime type.

Some studies include a young eyewitness that undertakes in a more substantial role within the crime scenario and these studies were shown to produce more positive credibility ratings from mock jurors. For example, a 3-part juror decision-making study conducted by Ross and colleagues (1990) revealed the following findings. Experiments 1 and 2 of the study involved a drug-possession crime where the eyewitness was clearly more involved in the crime scenario than the witness in the Goodman and colleagues (1987) study. The witness was at the defendant's apartment at the time of the crime, taking care of the defendant's cat while she was away on a trip. As the *witness was in the apartment* and did not encounter anyone else visiting the apartment during that time, he testified that the drugs found in the apartment must have been there prior to the defendant's trip and thus belonged to the defendant and not anyone else. The age of the witness was either 8-, 21-, or 74- years-old. Participants were asked to rate the guilt level of the perpetrator as well as the eyewitness' testimony on accuracy, confidence, forcefulness of response, credibility, objectivity, intelligence, trustworthiness, and the testimony's overall influence on the guilt level they attributed to the perpetrator. The only difference between the two experiments was that in the first experiment participants were presented with a video of a simulated court trial of the crime whereas in in the second experiment a paper transcript was used. Results for both experiments indicated that mock jurors rated the child eyewitness as most credible, the elderly eyewitness as moderately credible, and the adult eyewitness as least credible. Despite these credibility ratings (among other characteristics) of the eyewitness, it is noteworthy that the guilt ratings of the perpetrator, in both

experiments, were not influenced by eyewitness age. Contrary to the eyewitness in Goodman and colleagues' (1987) study, the eyewitness in the Ross and colleagues (1990) study was a bystander who was portrayed to have a greater level of involvement in the crime scene (i.e. he was housesitting in the apartment where the crime took place). Although some researchers may argue that the results of Ross' experiment are in-line with prior findings that indicate that the type of crime is a factor mediating the effects of age on jurors' perceptions (McCauley & Parker, 2001), a bystander study using a drug-related homicide crime illustrated contradicting findings to the notion that those types of crimes evoke a positive bias in jurors towards child eyewitnesses (Pozzulo & Dempsey, 2009).

Pozzulo and Dempsey (2009) examined how jurors rated the testimonies of a younger eyewitness compared to an older eyewitness. They observed age as a factor influencing juror decision-making by looking at a younger (i.e. 10-year-olds) versus older (i.e. 40-year-olds) bystander as well as victim eyewitness of a drug-related homicide. Mock jurors were presented with a trial transcript of either a younger or older eyewitness and then rated the reliability and credibility of the testimony and rendered a verdict for the defendant. In the bystander scenario, the witness observed the crime: a man held at gunpoint during a drug-deal. In the victim scenario, the witness was involved the crime: the witness was grabbed, held at gunpoint, and thrown to the ground before the perpetrator escaped. They found that the testimony of the younger eyewitness was perceived to be less credible than that of the older eyewitness (Pozzulo & Dempsey, 2009). In line with studies that posited that the underlying assumption of child eyewitnesses' memories were less advanced than adults' and more easily manipulated into providing false reports (Goodman et al., 1987), Pozzulo and Dempsey suggested that jurors' stereotypes of younger witnesses' inferior cognitive abilities, compared to their older

counterparts, may have been an influencing factor. However, with that said, Pozzulo and Dempsey (2009) found that the mock jurors' verdicts did not significantly differ for the younger versus older witnesses. Interestingly enough, in the victim scenario, age did not pose as an advantage - the adult and child witnesses were perceived as providing equally credible testimonies. On the other hand, in the bystander scenario, the adult was viewed as more credible than the child witness. Lastly, the child victim's credibility was rated more positively than the child witness' credibility. The findings of this study contradict the hypothesis suggested by McCauley and Parker (2001) that crimes involving drugs evoke a positive bias towards younger eyewitnesses. Although both studies by Ross, and colleagues (1990) and Pozzulo and Dempsey (2009) involve a witness of a drug-possession crime, they illustrate conflicting results. The witness in the Ross, and colleagues (1990) study plays a more substantial role than the bystander witness in the Pozzulo and Dempsey (2009) study. Thus, the disparity in findings may be accounted for by another factor at play such as the level of involvement of the witness.

Taken together, the results of all three studies lend support to the hypothesis that bystanders with passive involvement in the crime (Goodman et al., 1987; Pozzulo & Dempsey, 2009) rather than active involvement in the crime (Ross et al., 1990) evoke negative biases towards the credibility of young eyewitnesses' testimonies compared to their older counterparts; regardless of the type of crime witnessed. As the witness in the present study undertakes a more substantial role in the crime scene, i.e. converses with the perpetrator prior to the crime, the young witness could in turn be portrayed as more credible than an older witness who does not converse with the perpetrator regardless of the type of crime being witnessed (i.e. robbery).

Overall, the inconsistent findings regarding the influence of age on jurors' perceptions indicate that age alone is not the only determinant of jurors' perceptions of eyewitness

credibility. The nature of the crime in the current study involves a child eyewitness who is a bystander to an armed robbery and in addition to witnessing the crime (1) interacts with the perpetrator prior to the crime; and (2) is in the presence of a supportive figure (i.e. mother) at the time of the crime. Perhaps the addition of these factors may interact with age of witness in the eyes of jurors and in turn, positively enhance the credibility ratings of younger eyewitnesses.

Eyewitness Familiarity with the Perpetrator

The present study examined whether familiarity between the eyewitness and the perpetrator plays a role in the juror decision-making process. An archival study by Flowe, Mehta, and Ebbesen (2011) illustrates the likelihood of familiarity between the witness and perpetrator and its effects on prosecution rates. Out of the 273 eyewitness identification cases examined, 120 (44%) of the cases included identifications of the perpetrator from an eyewitness who was an acquaintance (i.e. familiar) with the perpetrator. Eyewitness identification significantly increased the probability that a case was prosecuted when the eyewitness was acquainted with the perpetrator compared to when they were strangers (Flowe et al., 2011). Further, the research depicts a relationship between the familiarity with the perpetrator and the accuracy of lineup identification where the more familiar the eyewitness is with the perpetrator, the more accurate they are in their lineup identification (Steblay, Dietrich, Ryan, Raczynski, & James, 2011).

For example, a study by Steblay and colleagues (Experiment 1, 2011) that investigated the identification process of eyewitnesses found that witnesses who have had prior exposure to a perpetrator (i.e. familiar with perpetrator) were better able to identify them in a lineup compared to witnesses who have not had prior exposure to the perpetrator (i.e. not familiar). This study found that a significant interaction mediated the association between prior exposure and

perpetrator presence in the lineup. Specifically, witnesses who were familiar with the perpetrator and were presented with a target-present lineup had the highest choosing rate whereas those who were not familiar with the perpetrator and presented with a target-absent lineup had the lowest choosing rate. More importantly, witnesses who were familiar with the perpetrator were more likely to make correct identifications and correct rejections (i.e. accurately rejecting the non-guilty suspects from the lineup) compared to witnesses who were unfamiliar with the perpetrator. Nevertheless, it is unclear whether jurors are aware of the positive influence that witness-perpetrator familiarity has on the witness' ability to make line-up identifications and rejections. As of now, there have only been a limited number of studies that have investigated jurors' perceptions of an eyewitness's degree of familiarity with the perpetrator and the ways in which this influences their decision-making process.

A study by Lindsay, Lim, Marando, and Cully (Experiment 4, 1986) investigated the (1) influences of time of day of the crime and (2) duration of time that an eyewitness was exposed to a perpetrator on the jurors' perceptions of eyewitness' credibility. The mock jurors listened to audiotapes of a neighbour (i.e. eyewitness) reporting their exposure to the perpetrator of a burglary. Under one of two viewing conditions (9AM on a sunny day or 1AM – with the closest streetlight being 60 feet away), the eyewitness was exposed to the perpetrator for varying amounts of time (less than 5 seconds, 30 minutes, or 30 minutes of interaction between the witness and perpetrator as he was loading his van). Lindsay and colleagues (1986) found that the mock jurors' final verdicts were not influenced by time of day or length of exposure to the perpetrator. Although the temporal factor had no significant effect on their final guilty verdict, mock jurors concluded that the amount of time was a factor in the eyewitness' ability to properly view the perpetrator such that the eyewitness was perceived to have had significantly less

opportunity to examine the perpetrator in the 5 second exposure condition than in the 30 minute

exposure conditions (Lindsay et al., 1986). This finding implies that the length of time that

eyewitnesses spend with perpetrators may be a sensitive factor for jurors. However, there has not

been as much research into the types of interactions that can occur between the witness and

perpetrator over and above *duration* of interaction.

Other research examining eyewitness' familiarity with the perpetrator and its influence

on juror decision-making took a different approach to the concept of familiarity. For instance, a

more recent study by Pozzulo, Pettalia, Bruer, and Javaid (2014) examined the effects of

familiarity between the eyewitness and the perpetrator on the juror decision-making process.

Specifically, Pozzulo and colleagues (2014) considered familiarity in terms of the number of

times the eyewitness was exposed to the same perpetrator and how these exposures interacted

with eyewitness age (4-, vs. 12-, vs. 20- years-old). Each eyewitness testimony varied in the

number of times the eyewitness was exposed to the same perpetrator prior to the crime (i.e. no

exposure to the perpetrator, three exposures to the perpetrator, or six exposures to the

perpetrator). The jurors then were asked to judge the reliability, accuracy, and credibility of the

eyewitness based on their testimony. Contrary to this study's hypothesis that as the frequency of

the eyewitness' exposure to the perpetrator increased, the jurors would view the witness'

testimony as more credible, reliable, and accurate, and thus more likely to increase their guilty

verdicts, their results did not support the hypothesis (Pozzulo et al., 2014). In line with previous

findings, the older eyewitness (20-year-old) was perceived as more credible than its younger

counterparts (4- and 12-; McCauley & Parker, 2001; Pozzulo et al., 2014) but age did not

influence the final verdict (Pozzulo et al., 2014) (a finding observed in other studies as well;

Bruer & Pozzulo, 2014; Johnson & Grisso, 1986). The lack of significant findings regarding

verdict decisions suggest that exposure to a perpetrator (in the Pozzulo and colleagues study [2014], only six times) prior to a criminal offense, without an interaction with that perpetrator, may not be sufficient for jurors to be convinced that a necessary degree of familiarity between the perpetrator and eyewitness exists and thus, in turn, influences their decision-making.

The research around familiarity between the eyewitness and the perpetrator and its influence on the jurors' judgments has been quite limited. Familiarity has been assessed as the length of time that the eyewitness was exposed to the perpetrator (Lindsay et al., 1986) as well as the number of interactions between the eyewitness and the perpetrator (Pozzulo et al., 2014). Neither of these studies found significant results while exploring 'familiarity', which could suggest that (1) familiarity is not considered by jurors when making decisions about the eyewitness' credibility, or (2) familiarity has not yet been tested in a way that represents various crime situations and contexts. As familiarity can be explored in a multitude of ways, not just by length of exposure (Lindsay et al., 1986) or number of times of exposure (Pozzulo et al., 2014), the present study will manipulate familiarity as the quality of interaction between the eyewitness and the perpetrator. For instance, do jurors judge the accuracy, credibility, and reliability of the eyewitness differently when the eyewitness was simply exposed to the perpetrator or interacted with the perpetrator for the same length of time? Unlike prior studies, the current study will keep the number of exposures between the perpetrator and eyewitness constant as well as the length of time that the witness was exposed to the perpetrator in order to control for the possible influence of exposure time. The study aims to examine jurors' reactions to the eyewitness-perpetrator interaction in order to determine whether judgements of eyewitness credibility, reliability and accuracy will be enhanced due to the level of familiarity between the eyewitness and the perpetrator.

Eyewitness Age and Familiarity

Many cases involve an eyewitness who is familiar with the perpetrator *and* involves children and adolescents (*People v. Aguilar*, 2008; *People v. Rountree*, 2005; *People v Rubalcava*, 2005). The literature suggests that familiarity between the witness and the perpetrator does have an influence on lineup identification accuracy (Steblay, et al., 2011) as well as eyewitness lineup identification by a child. Yet, due to the limited empirical studies on this topic, it is unclear whether jurors are aware of this. Although the aforementioned study by Pozzulo, and colleagues (2014) found no influences of familiarity and its interaction with age, there are juror decision-making studies that produced interesting results in regards to witness age in which the eyewitness was acquainted with the perpetrator but familiarity *was not specifically* examined as a variable. For instance, the witness described in Ross, and colleagues' (1990) study was an acquaintance of the perpetrator however, that study did not specifically explore the role of familiarity. The mock jurors of Ross' study rated the child (i.e. 8-year-old) witness' credibility most positively. It is unclear whether these positive ratings were due to the *type of crime* (the examined variable in the study) or perhaps due to the witness-perpetrator familiarity (the unexamined, potentially underlying factor of that study).

The present study aims to extend the body of literature concerning familiarity and age of eyewitness by examining familiarity as the quality of interaction between witness and perpetrator prior to the criminal incident.

Eyewitness Age and Social Support

A factor that has not yet been studied in the literature is the influence of social support offered to an eyewitness at the time of the crime and its effect on jurors' perceptions. Crimes such as the robbery in New Zealand involved children (as discussed earlier), some who were

presumably in the presence of their parents. It is unknown whether the jurors of this case assessed the children's testimonies differently depending on whether their parent was present or not. As younger children are typically accompanied by a parental figure, understanding whether the presence of a parent is influential to the juror decision-making process is vital. Although the adult might be asked to testify instead of the child, there are situations where that does not seem possible. For instance, when a Cambodian family of immigrants (mother, father, and two children) witnessed a robbery attempt in their home, the children were questioned instead of their parents due to the lack of the English language among their parents (Groves, 2002, pp 8). The present study aims to fill the gaps in the literature and discover whether this factor (i.e. a parent's presence at the crime scene providing social support) has an effect on jurors' perceptions.

In order to comprehensively understand where the current research stands in regards to jurors' perceptions of child witnesses who receive parental social support while witnessing a crime, studies pertaining to the influence of perceived social support as well as the influence of social support on cognitive abilities will be reviewed, followed by jurors' perceptions of certain elements (e.g., stress, age, etc.; Benton et al., 2006; Kassin et al., 1989; Kassin et al., 2001) of witnessing conditions. This will demonstrate to what degree the effects of social support are understood by researchers and by jurors.

There are a number of studies that indicate that perceived social support in stressful situations helps children's ability to cope with stress and benefits the accuracy of children's reports (Davis & Bottoms, 2002). For instance, research in other domains illustrate that perceived social support was found to improve both the psychological well-being of children as well as their perceived capability of coping with stress (Cohen & Wills, 1985; Sarason, Pierce, & Sarason, 1990) as well as short-term recall (Kelley & Gorham, 1988). Researchers focusing on

children's testimonies have taken these findings into consideration and theorized that social

support is beneficial, rather than detrimental, to children's reporting accuracy (Davis & Bottoms,

2002).

Studies regarding the effects of social support on child reporting accuracy have primarily

focused on interviewer support where the child was either interviewed by an intimidating person

(i.e. stranger, police officer, etc.; Tobey & Goodman, 1992) or a supportive person (i.e. the

child's mother; Goodman, Sharma, Thomas, & Considine, 1995; Ricci, Beal, & Dekle, 1996).

The typical findings of these studies were that those interviewed by a supportive figure (i.e.

mother) answered the interview questions more accurately than children interviewed by an

intimidating figure (i.e. stranger, police officer; Goodman et al., 1995; Ricci et al., 1996; Tobey

& Goodman, 1992).

Another study by Goodman, Bottoms, Schwartz-Kenney and Rudy (1991) on interviewer

social support investigated the effects on age and cognitive performance. Child participants were

either 3 to 4 years of age or 5 to 7 years of age and were questioned about a medical vaccination

(that was deemed stressful and occurred two and four weeks prior) in a supportive manner or a

neutral manner. The study illustrated an overall positive effect of social support where those who

were interviewed in a supportive manner reported less inaccuracies and were less suggestive to

misleading questions by the interviewer. Even more so, despite the significantly greater omission

inaccuracies of the younger children compared to the older children regarding the occurrence of

abuse when in the neutral support condition, the supportive condition appeared to eliminate age

discrepancies in falsely stating that something occurred when questioned about abuse.

Although these studies illustrated the positive effects of children's perceived social

support during the interview process, in the present study, the mock jurors will be rating

eyewitnesses who are in the presence of a supportive figure during the stressful event (i.e. the crime) and not after the stressful event (i.e. when being interviewed). Thus, it is imperative to next review studies that shed light on the effects of social support during a stressful event such as a crime and then examine whether jurors are aware of these effects.

Studies on the presence of social support during stressful situations illustrate that adult participants in perceived support conditions typically outperform/surpass those in neutral-support conditions on cognitive tasks (Sarason & Sarason, 1986). Social support in children also was examined and findings suggest that the level of support given to the child *during* a stressful task/event can have an effect on memory accuracy and overall cognitive performance. (Goodman, Quas, Batterman-Faunce, Riddlesberger, & Kuhn, 1994) A study by Burleson, Albrecht, Goldsmith, and Sarason (1994) demonstrated that cognitive performance was improved during a stressful situation when participants were in conditions of high social support rather than low social support. In fact, high social support has been found to reduce physiological arousal and improve memory performance (Quas, Bauer, & Boyce, 2004). Moreover, some researchers also revealed that social support *during* encoding of a stressful event positively interacts with age to enhance cognitive functioning. Specifically, a study by Goodman, and colleagues (1994) examined children of three age groups (3-4; 5-6, and 7-10) and their memory accuracy of a highly stressful medical procedure (i.e. Voiding Cystourethrogram Fluoroscopy (VCUG)) that they endured while in the presence of their mother. The emotional support offered by their mother varied, with mothers offering their child either a high level of support/comfort or little to no support/comfort during the procedure. The study illustrated age to be the strongest predictor for memory accuracy, where older, compared to younger, children recalled more about the experience, answered more questions correctly, and made less errors. Nevertheless, when age

was statistically controlled, individual differences such as emotional support from their caregiver (i.e. mother/parent) was also the most significant predictor of children's memory accuracy. The study depicted the emotional support that the mother offered during/following the stressful event to have had the potential to assist the children in absorbing/recalling more details (accurately) of the event (Goodman et al., 1994).

Overall, social support has been cited to have an influence in offsetting the negative outcomes of stress. The cultivation of social support comes from the relationships and interactions between the individual, family, peer group, and larger social systems (Boyd, 2002). Parental support appears to be a contributing factor towards alleviating stress. Parental support may come in a few forms such as emotional and instrumental support (Hombrados-Mendieta, Gomez-Jacinto, Dominguez-Fuentes, & Garcia-Leiva, Castro-Travé, 2012). Perceived emotional support from parents has been shown to have positive effects on children such as academic performance (Cutrona, Cole, Colangelo, Assouline, & Russell, 1994). Further, a study by Barnes, Potter, and Fiedler (1983) examined varying levels of parental support on the achievements of their children in cadets. The study illustrated that children who perceived high social support from their parents performed better during these stressful tasks at cadets than children who perceived low social support from their parents.

These studies examined that social support, in terms of having a friend/parent who behaved in a comforting manner at the time of the stressful experience, has the ability to enhance memory performance (Burleson et al., 1994; Goodman et al., 1994) and reduce the negative effects of stress (Cutrona et al., 1994) perhaps due to the reduction of physiological arousal in these conditions of high support (Quas et al., 2004). Taken together, this research highlights children's enhanced ability to accurately store memories of stressful events when in high social

conditions (i.e. in the presence of a supportive figure such as a mother) (Carter, Bottoms, & Levine, 1996; Davis & Bottoms, 2002) and counteract the negative outcomes of stress (Cutrona et al., 1994).

At the present time, it is unclear how the presence of high social support (through the addition of a supportive figure) at the scene of the crime affects jurors' perceptions and verdict decisions. There are no studies that examine whether jurors' judgements of a child eyewitness are influenced by the awareness of the child experiencing a high level of social support (i.e. when their mother, the supportive figure, is also present) during the crime. However, there does exist literature regarding the perception of eyewitness memory accuracy during stressful events (Benton et al., 2006; Kassin et al., 1989; Kassin et al., 2001) which could allow us to infer possible judgements about social support.

Survey research that has been conducted over the years may shed some light on people's opinions of the influences of a variety of factors on eyewitnesses' memory accuracy of a crime. For instance, Kassin and colleagues (1989) surveyed 63 experts on the reliability of 21 items such as stress, age, confidence, etc. They found that 71% of experts believed that 'very high levels of stress impair the accuracy of eyewitness testimony'. Kassin and colleagues (2001) then resurveyed experts and found that 60% of experts believed that stress impairs the accuracy of eyewitness testimony and 50% of experts said that they would testify in court based on their assumption that this is a reliable phenomenon. These opinions; however, are those of experts and may not be representative of laypersons' beliefs. Thus, Benton and colleagues (2006) further extended upon Kassin and colleagues' (1989; 2001) research by examining the beliefs of jurors, judges, and law enforcement of the influencing factors of eyewitness accuracy. They found that 68% of jurors believed that stress impairs the accuracy of eyewitness testimony. Taken together,

the eyewitness' experience of high stress appears to influence the perception of testimony accuracy for both experts and jurors and in turn, their decision-making process.

Although we do not know the effects of the presence of perceived social support on jurors' judgements, the above survey delineates how jurors view stress. It appears as though jurors are likely to rate the testimonies of child eyewitnesses negatively due to the perceived stress. However, if jurors are aware of children's ability to perform better when in conditions of high support, reducing the negative impact of stress, perceptions of child eyewitnesses' credibility, reliability, and accuracy might differ. This study aims to examine the understanding of jurors by exploring the influence of the presence of social support experienced by the child eyewitness during the crime on juror decision-making.

The Current Study

The purpose of the present study was to examine the influence of the eyewitness' age (i.e. 10- vs. 15- vs. 20- years of age), the quality of the interaction between the eyewitness and perpetrator (i.e. having a conversation with the perpetrator vs. observing the perpetrator), and the presence of social support (i.e. witnessing the crime alone vs. with a parent) on the jurors' perceptions of the eyewitness' credibility, accuracy, reliability, and the decision of the defendant's guilt.

Hypotheses

Hypothesis 1: There will be a main effect of age where as the age of the eyewitness increases, the jurors' perception of their reliability, credibility, and accuracy will increase.

Hypothesis 2: Jurors will perceive eyewitnesses who are familiar with the perpetrator (depicted by the witness conversing with the perpetrator) as more credible than eyewitnesses who are not

familiar with the perpetrator (depicted by the witness solely being in the presence of the perpetrator without any conversation occurring).

Hypothesis 3: Jurors will perceive eyewitnesses in the presence of social support condition (whose parent/supportive figure was with them at the time of the crime) as more credible than eyewitnesses who were in the non-support condition (those without their parent/supportive figure at the time of the crime).

There will be an interaction between age and social support. As the age of the eyewitness increases in each of the two conditions, the jurors' perception of their credibility will increase.

Hypothesis 3a: The youngest eyewitness (10-) will be perceived as least credible when in the non-support condition (when the parent/supportive figure is absent from the crime scene).

Hypothesis 3b: The oldest eyewitness (20-) will be perceived as most credible when in the presence of social support condition (when the parent/supportive figure is present at the crime scene).

Hypothesis 3c: Younger eyewitness (10-) will be perceived as more credible when in the presence of social support condition (when the parent/supportive figure is present at the crime scene) than older eyewitnesses (15-, 20-) when in the non-support condition (when the parent/supportive figure is absent from the crime scene).

Hypothesis 4: There will be a three-way interaction between age, quality of interaction with perpetrator, and presence of social support. As age increases, the juror's perception of the eyewitness' testimony becomes more positive across all quality of interaction and independence conditions. In the quality of eyewitness-perpetrator interaction condition, age will contribute more significantly to the viewing condition rather than the conversing condition, although eyewitnesses in the conversing condition will across age groups be perceived more positively by

the jurors. In the presence of social support condition, age will contribute more significantly to the alone condition rather than the parent condition, although eyewitnesses in the parent condition will across age groups be perceived more positively by the jurors.

Hypothesis 5: There will be an interaction between verdict decisions of mock jurors and a number of factors, including: the age of eyewitness, the quality of interaction, and the presence of social support.

Hypothesis 5a: There will be an interaction between verdict decisions of mock jurors and age of eyewitness, where mock jurors' guilty/non-guilty verdicts will side with the testimonies of the older eyewitness.

Hypothesis 5b: There will be an interaction between verdict decisions of mock jurors and quality of interaction, where mock jurors' guilty/non-guilty verdicts will side with the testimonies of the eyewitness that spoke to the perpetrator at the time of the crime.

Hypothesis 5c: There will be an interaction between verdict decisions of mock jurors and presence of social support, where mock jurors' guilty/non-guilty verdicts will side with the testimonies of the eyewitness that was in the presence of social support (i.e. with their mother).

Method

Participants

Undergraduate students ($N = 281$; 186 females, 89 males, and 1 gender fluid participant) were recruited through the SONA database at Carleton University. Ages ranged between 17 to 48 ($M = 20.53$) years-old. Participants indicated that they belonged to one of the following ethnic groups: White ($N = 189$), Black ($N = 27$), East Asian ($N = 7$), South Asian ($N = 14$), Southeast Asian ($N = 5$), West Asian ($N = 15$), Latin American ($N = 5$), Aboriginal Canadian (N

= 1), mixed origin ($N = 13$), and other ($N = 4$). All participants received 0.25% course credit for their participation.

Design

A 2 (quality of interaction with perpetrator: brief verbal exchange with the "perpetrator" vs. watching the perpetrator for the same period of time), X 3 (age of eyewitness: 10-, 15-, 20-years-old) X 2 (presence of social support when with perpetrator: eyewitness being alone vs. eyewitness in the presence of their mother) between subjects factorial design was used. The dependent variables were 1) the mock jurors' ratings of the reliability, accuracy, and credibility of the eyewitness' testimony, 2) the verdict of the perpetrator (guilty vs. not guilty), and 3) rating of guilt using a scale from 1 (not at all guilty) to 100 (absolutely guilty).

Materials

Trial transcripts. There were twelve versions of a mock trial transcript that only differed in the eyewitnesses' familiarity with the perpetrator, age of the eyewitness, and the presence of social support for the eyewitness. All other attributes of the mock trial transcript were kept constant.

Each transcript commenced with opening statements from the Crown and Defence attorneys which presented the mock jurors with a summary of the case: a store clerk was held up at gun point and forced to stand still as the perpetrator stole electronics and cash from the store. In every condition an eyewitness to the crime took the stand and described the perpetrator as she remembered him. The eyewitness stated her age as either 10-, 15-, or 20- years-old. The prior interaction took place in the front section of the store where a male either conversed with the witness as he was shopping or was watched by the witness as he shopped by himself. The

transcripts also indicated under what circumstances the witness and perpetrator met (alone or with their mother).

The transcripts came to an end as the Crown and Defence attorneys provided their closing statements followed by the judge's instructions and a statement regarding the resulting criminal charge. These transcripts can be found in Appendix B.

Manipulation check. The mock jurors were required to answer a number of questions regarding the details of the trial transcript in order to assess whether mock jurors paid attention to the transcripts and therefore reflected on their responses. Three of the questions pertained to the independent variables of the experiment: the eyewitness' age, quality of interaction with the perpetrator, and presence of social support. The remaining questions were relating to less imperative case details such as the name of the victim, date and time of the crime, clothing of the criminal, etc. as filler questions. This manipulation check served to rid the final analysis of cases where participants did not attend to the transcript in the way it was intended. In other words, in the event that participants erroneously respond to the three questions pertaining to the independent variables, that participant's data were removed from the data set and not analyzed. The manipulation check questions can be found in Appendix F.

Participant demographics questionnaire. The mock jurors were asked to provide personal information about themselves including age, sex, and ethnicity/race in order to better understand if any differences in response were due to such factors. This participant demographics questionnaire can be found in Appendix C.

Verdict. The mock jurors were requested to provide a guilty or not guilty verdict for the defendant (charged with bank robbery with a weapon) on two scales: a dichotomous scale (guilty

or not guilty) and a continuous scale (1 = not guilty; 100 = guilty). This verdict questionnaire can be found in Appendix D.

Perceptions of eyewitness – Eyewitness ratings. The mock jurors were requested to provide a rating of the eyewitness' testimony on several dimensions including reliability, accuracy, and credibility of the testimony using a 100-point rating scale (1 = not; 100 = absolutely). Specifically, the reliability of the eyewitness' description of the crime and the description of the perpetrator was rated. Furthermore, the accuracy of the testimony as well as the eyewitness' credibility was rated by the jurors. These perceptions of eyewitness questions can be found in Appendix E.

Procedure

After ethical approval was obtained, participants were recruited to participate via the SONA recruitment tool (see Appendix A). In order to allow more students to access the study at their convenience, data were collected through the online survey tool, Qualtrics. The responses collected were anonymous and the IP address collection was removed from the options when creating the online survey. Throughout the survey, a "Withdraw" option was included, which participants could have clicked at any time, and which would have lead them to the debriefing form.

The study lasted one testing session, approximately 15-30 minutes. Upon clicking the study URL, participants were asked to read an informed consent form (Appendix G) that provided them with all of the essential details of their participation. Those who agreed to participate were randomly assigned to one of the twelve conditions. They read the trial transcript (Appendix B) and answered the related questionnaires (Appendix C-F). Once they completed the

questionnaires they were prompted to read the debriefing form (Appendix H) and thanked for their time. All participants were given 0.25% credit for their participation.

Results

Preliminary Analyses

Missing data. The raw dataset included 746 participants. Out of those participants, 145 participants were taken out due to not granting consent, incompletion of the questionnaires in the study, or invalid responses such as inputting their full names in the questions where participants were asked to expand on their verdict decision ($N = 601$). A missing data analysis was then conducted, revealing that the remaining missing data was not less than 2%, which as suggested by Allison (2001), is fairly negligible. The Estimated Marginal Means from the Little's Missing Completely at Random (MCAR) test were examined and the chi-square was found to be not significant, which Allison (2001) and Roth (1994) suggest is a good indication that the data is missing at random. Therefore, the Expectation Maximization (EM) procedure was utilized to fill the missing data points with values. EM is a Maximum Likelihood (ML) approach and is used to estimate parameters in order to estimate the missing values. ML was chosen in this step of the data cleansing because, according to the literature on missing data analysis, it is considered a superior imputation method for multivariate normal distributions ($N = 601$) (Roth, 1994).

Manipulation check. Five manipulation check multiple choice questions were presented to participants in order to evaluate the salience of the three manipulated variables. The questions that were directly related to the experimental variables (questions 3 and 5) were analyzed for accuracy. There were 144 participants who failed question 5, the age manipulation question, and 152 participants who failed question 3, the quality of interaction with the perpetrator (familiarity)

manipulation question and therefore these participants' data were removed from the rest of the analyses. The remaining filler questions (questions 1 and 4) were discarded ($N = 305$).

Question 2, the manipulation question related to 'presence of social support', could not be analyzed for accuracy because the question lacks sufficient face validity and elicited inaccurate responses from the participants. Specifically, the manipulation question presented to participants was, 'Was the witness in the presence of another person?' and was intended to analyze the saliency of the 'presence of social support' variable as it relates to the witness' mother specifically. However, to the reader this is confusing because in the transcript, in certain conditions, the witness is in the presence of the perpetrator and participants thus answered 'yes' to this question even though the intent was only to elicit 'yes' responses when the witness was in the presence of their mother, not the perpetrator.

Response duration outliers. According to an exploratory descriptive analysis, the median duration to complete the questionnaires was 16.88 minutes. There were fifteen individuals who took an abnormally short amount of time (< 6 minutes) to complete the questionnaire and therefore their data were removed. Looking at the stem and leaf plot, there was also a clear break for participants who completed the study in under six minutes which further justified removing them from further analyses. Participants who completed the study in under six minutes were at risk of missing key details of the transcript that could have negatively influenced their ability to properly answer the questions in latter sections. There was also a clear break in the data distribution for participants who took over 70 minutes to complete the study and therefore nine participants were removed for a total of $N = 281$. The final number of participants per condition can be viewed in Appendix I.

Reliability, credibility, and accuracy. These three scales (reliability, credibility, and accuracy) were comprised of three items each. A correlation analysis was conducted on each of the three items in each of the following scales: reliability, credibility, and accuracy, revealing significant results. Due to the significance found in the correlations between the three items used to makeup each scale (i.e. reliability, credibility, and accuracy), three composite scores of the average of the three items for each respective scale were generated for each participant. These three new variables (reliability average, credibility average, and accuracy average) were used in further analyses as dependent variables.

Main Analyses

The purpose of the present study was to examine the influence of eyewitness age (i.e. 10-, 15-, or 20- years of age), the quality of the interaction between the eyewitness and perpetrator (i.e. a conversation with the perpetrator or observing the perpetrator), and the presence of social support when with perpetrator (i.e. witnessing the crime alone or with a parent) on mock jurors' perceptions of the eyewitness' credibility, accuracy, reliability, and the decision as to the defendant's guilt.

Jurors' perceptions of the eyewitness' reliability, accuracy, and credibility. A multivariate analysis of variance (MANOVA) was conducted using three dependent variables as covariates (jurors' ratings of eyewitness' reliability, accuracy, and reliability). The independent variables were age, quality of interaction, and presence of social support (Hypotheses: 1, 2, 3a-3c). A series of Pearson correlations previously performed between the three dependent variables in order to test the MANOVA assumption that the dependent variables would be correlated with each other (see Appendix J). The dependent variables were sufficiently correlated to run a MANOVA. The significance of the combined dependent variables by each independent variable

were then was measured using Wilks' λ. The main effects of the predictor variables of

eyewitness age, quality of interaction, and presence of social support were not significant; $F(6,$

$234) = 0.528$, $p = .787$, partial $\eta = .006$, $F(3, 267) = 1.134$, $p = .336$, partial $\eta = .013$, and $F(3,$

$267) = 1.592$, $p = .192$, partial $\eta = .018$, respectively. No significant effects were found between

the combined dependent variables and the independent variables and therefore, no further

analyses were conducted. Therefore, hypotheses 1-3c were not supported by the findings in this

research study. These results can be seen in Table 1. When looking at the interaction of age and

quality of interaction, age and presence of social support, and quality of interaction and presence

of social support (Hypothesis 4), no significant interactions were found; $F(6, 534) = .426$, $p =$

$.861$, partial $\eta = .005$, $F(6, 534) = 1.205$, $p = .302$, partial $\eta = .013$, $F(3, 267) = .784$, $p = .504$,

partial $\eta = .009$, respectively. There were no significant three-way interactions found, $F(6, 534)$

$= 1.176$, $p = .317$, partial $\eta = .013$.

Table 1

MANOVA of jurors' ratings of witness' credibility, reliability, and accuracy by eyewitness age, quality of interaction, and social support

	Wilks' λ	df	F	η	Sig
Eyewitness Age	.99	6	.53	.01	.79
Quality of interaction	.99	3	1.13	.01	.34
Social Support	.98	3	1.59	.02	.19
Eyewitness Age * Quality of interaction	.99	6	.43	.01	.86
Eyewitness Age * Social Support	.97	6	1.21	.01	.30
Quality of interaction * Social Support	.99	3	.78	.01	.50
Eyewitness Age * Quality of interaction * Social Support	.97	6	1.18	.01	.32

*$p < 0.05$, *$p < 0.01$, **$p < 0.001$.

Juror verdicts. As jurors' verdicts were assessed by examining both their guilty ratings of the perpetrator and their verdict decision (guilty/not-guilty), two separate analyses were conducted and described below.

Guilt ratings. A 3 (eyewitness age: 10- vs. 15- vs. 20- years-old) x 2 (quality of interaction: a conversation with the perpetrator vs. observing the perpetrator) x 2 (presence of social support: witnessing the crime alone vs. with a parent) between-subjects analysis of variance (ANOVA) was conducted on mock jurors' guilt ratings (Hypothesis 5). Levene's test was conducted, $F(11, 266) = 1.519, p = .124$; revealing that the homogeneity of variance

assumption was met. The univariate analysis did not reveal any main effects of eyewitness age,

$F(2, 266) = 2.871$, $p = .058$, quality of interaction, $F(1, 266) = .055$, $p = .815$, or presence of

social support, $F(1, 266) = 3.642$, $p = .057$. There were no significant interactions found between

age and quality of interaction, $F(2, 266) = .156$, $p = .856$, age and presence of social support,

$F(2, 266) = .433$, $p = .649$, and quality of interaction and presence of social support, $F(1, 266) = 1.562$, $p = .212$. Lastly, no three-way interactions were found to be significant, $F(2, 266) = 2.076$, $p = .127$. Due to the lack of main effects and interactions found, no further analyses were

conducted.

A summary of mock jurors' mean guilt ratings for the perpetrator as a function of

eyewitness age, quality of interaction, and social support, can be seen in Table 2.

Table 2

Mean (SD) guilt ratings as a function of eyewitness age, quality of interaction, and social support

	Guilt Ratings*
Eyewitness Age	
10 Years Old	46.50 (25.33)
15 Years Old	47.21 (26.48)
20 Years Old	54.57 (24.34)
Quality of interaction	
Familiar	48.91 (24.99)
Unfamiliar	49.92 (26.41)
Social Support	
Alone	46.85 (24.86)
With Mother	52.24 (26.13)

*Guilt ratings were created on a scale of 1 to 100 where 0 = definitely not guilty and 100 = definitely guilty.

Dichotomous verdict. A sequential logistic regression analysis was conducted on verdict to test Hypothesis 5 (see Table 3). Verdict was a dichotomous verdict choice (coded as 0 for Guilty and 1 for Not Guilty) and was regressed on eyewitness age, quality of interaction, and presence of social support variables in step 1. The first model was found to be significant; χ^2 (4, $N = 281$) = 11.240, $p = .024$, indicating that the predictors, as a set, significantly distinguish between mock jurors' verdicts (guilty vs. not guilty). The Hosmer and Lemeshow test indicated good model fit; $\chi^2 = 6.012$, $df = 8$, $p = .646$ (Nagelkerke R square = .054) on the basis of the predictor factors alone. The Wald test of significance revealed that only the presence of social support variable was found to reliably predict dichotomous verdict, β (1) = .685, $p = .008$, Wald's $\chi^2 = 6.997$, where the jurors' guilty and not guilty verdicts differ significantly only in

how they view the presence of social support for the eyewitness during a crime. Mock jurors who read transcripts of the eyewitness who was alone at the time of the crime were 1.983 times more likely to consider the perpetrator to be 'Not Guilty' than 'Guilty', 95% CI [1.194, 3.293].

In the second block, 2-way interaction terms were entered, and in the third block, 3-way interaction terms were entered. Block χ^2 (5, $N = 281$) = 3.153, $p = .676$ at Block 2, indicating no significant improvement with the addition of the 2-way interactions as predictors of juror verdicts. Block χ^2 (2, $N = 281$) = 3.107, $p = .212$ at Block 3, indicating that the 3-way interaction terms did not significantly contribute to the variance accounted for in the previous models. Thus, Hypotheses 5a and 5b were not supported, but 5c was supported by the findings.

Table 3

Logistic regression predicting verdict from eyewitness age, quality of interaction, and social support

	β	S.E.	Wald	df	Sig	Exp(B)	95% CI for Exp(B)	
							Lower	Upper
Eyewitness Age								
10	0*		3.42	2	.18			
15	-.39	.32	1.44	1	.23	.68	.36	1.28
20	-.57	.31	3.32	1	.07	.56	.31	1.04
Quality of interaction								
Familiar	0*			1				
Unfamiliar	.12	.26	.21	1	.65	1.13	.67	1.88
Social Support								
Alone	0*			1				
With Mother	.69	.26	7.00	1	.01	1.98	1.19	3.29

Note. SE = Standard Error. Reference category (coded as 0) for each predictor variable.
*This parameter is set to zero because it is redundant.

Discussion

The current study explored the effects of eyewitness age, quality of interaction between the perpetrator and the witness (for the purposes of this discussion, familiar vs. unfamiliar), and the presence of social support of the eyewitness on juror verdicts and perceptions of credibility, reliability, and accuracy. The main objective of this study was to further investigate the associations between these variables, and to elaborate on the dearth of studies related to the effects of these factors on the juror decision-making process.

Mock jurors' ratings of reliability, credibility, and accuracy.

Age of eyewitness. The age of the eyewitness was hypothesized to have an effect on mock jurors' ratings of the eyewitness' reliability, credibility, and accuracy; where testimonies of a younger eyewitness (i.e. 10-year-old witnesses) would be perceived as less reliable, credible, and accurate than older eyewitnesses (i.e. 15 and 20- year-old witnesses).

These ratings were not found to differ according to eyewitness age and therefore Hypothesis 1 was not supported. As no significant differences between age and the other two independent variables (quality of interaction, and presence of social support) were found to be significant, Hypotheses 2a-2c, 3a-3c, 4) were also not supported by the findings in this study. These non-significant findings may reflect that jurors perceive the age range of the ten-year-old and 20-year-old witness to be too close to elicit enough of a discriminative response. Perhaps the differences between perceptions of child eyewitness' reliability, credibility, and accuracy would have been amplified and significant if the child in the transcript was younger than ten. It is also possible that the age gap between the ten-year-old witness and the 20-year-old witness could have elicited significantly different ratings from mock jurors had the older eyewitness been even older than 20-years-old. Support for this rationale comes from a study by Goodman, and colleagues (1987) that investigated the role of eyewitness age on jurors' perceptions of eyewitness credibility. In this study, the eyewitness' age was six-, ten-, or 30- years-old, thus, a 24-year difference between the youngest and the oldest eyewitness (compared to only a 10-year gap in the current study). Goodman found that the youngest eyewitness (6-year-old) was rated as less credible than the oldest eyewitness (30-year-old). The other age comparisons in the study were not shown to have significant differences.

Contrary to the Goodman and colleagues study (1987), McCauley and Parker (2001) chose to use two eyewitnesses with closer ages to one another (i.e. 6- and 8-year-olds) did not

find that age had any effect on the perceptions of jurors on the credibility of the eyewitnesses.

Similarly, Nightingale's (1993) experiment and Golding and colleagues (1997) also chose to use

eyewitnesses with closer ages (i.e. 5-, 9-, and 13-year-olds and 4-, 6-, and 14-year-olds;

respectively) and did not find that age had any effect on the perceptions of jurors on the

credibility of the eyewitnesses. Thus, it appears that the particular ages chosen may be a critical

factor in finding a significant relationship between eyewitness age and jurors' perceptions of

credibility (Bottoms & Goodman, 1994; Duggan III et al., 1989; and Goodman et al., 1989).

Additionally, the mean age of the participants in the study was 20.53, which is the same

age as the witness in the transcript. The age of the participants could have influenced their

perceptions of the 20-year-old eyewitness. As the majority of mock jurors were also 20-years-

old, they could have identified with the eyewitness (in age) and factored into their ratings of

reliability, credibility, and accuracy. As undergraduate participants are often used as mock jurors

in studies and the average range of an undergraduate student is 18-22 years of age, this is a

phenomenon that should be further explored.

Overall, since the present study did not find eyewitness' age to significantly influence the

mock jurors' perceptions of eyewitness' credibility, reliability, and accuracy, we cannot conclude

that as the age of an eyewitness increases, jurors find their testimonies to be more credible,

reliable, and accurate.

Familiarity with the perpetrator. There was an anticipated influence of quality of

interaction on jurors' perceptions of the eyewitness' reliability, credibility, and accuracy, where

mock jurors who read transcripts of eyewitnesses that conversed with the perpetrator at the time

of the crime would be rated as more reliable, credible, and accurate than those jurors who read

transcript of eyewitnesses who simply observed the perpetrator at the time of the crime

(Hypothesis 2). The findings of the current study suggest that the quality of interaction between the eyewitness and the perpetrator does not appear to play a significant role in the juror decision-making process and therefore Hypothesis 2 was not supported. No two-way or three-way interactions were found to be significant either (Hypothesis 4). These findings are consistent with the findings of previous studies that have explored the influence of eyewitness familiarity in the juror decision-making process (e.g. Lindsay et al., 1986; Pozzulo et al., 2014). Prior research examining familiarity between the perpetrator and eyewitness investigated alternative concepts of familiarity (i.e. length of exposure time to the perpetrator and frequency of interactions with the perpetrator) and have not found significant results.

It is possible that the difference between the familiar and unfamiliar conditions were not different enough for the mock jurors to elicit more extreme views of the reliability, credibility, and accuracy of the eyewitness (in each condition) presented in the study's transcript. For instance, the transcript suggested that the eyewitness in the familiar condition spoke to the perpetrator but this conversation was minimal in the transcript. There was no deep conversation that occurred between the two parties, in fact, they spoke in brevity of items in the store. In the unfamiliar condition, it was noted that the witness saw the perpetrator shop around for items in the store. In both conditions, the witness and the perpetrators' interactions could be deemed superficial, eliciting quite similar responses from jurors. Though, since there was a slight increase in jurors' ratings when they read the familiar condition, perhaps this could suggest that the conversation between the witness and the perpetrator had begun to influence the jurors' perceptions of the eyewitness. Perhaps future studies should further examine the concept of eyewitness and perpetrator familiarity where the familiar condition includes a longer and deeper interaction with the perpetrator than the one in this study.

Presence of social support. When examining the role of the presence of social support of the eyewitness on jurors' perceptions, the results of the study suggest that jurors who read transcripts where the eyewitness was with their mother perceived the perpetrator as more guilty than those jurors who read transcripts where the eyewitness was alone. This significant finding will be elaborated on below in the 'Verdict' section of the discussion.

Mock jurors' verdicts. Initially, it was assumed that the eyewitness' age would influence mock jurors' verdict decisions, where the testimony of an older eyewitness would be more influential than that of a younger eyewitness (Hypothesis 5). The study did not reveal results that supported this hypothesis. However, consistent with Hypothesis 5c, dichotomous guilt was found to be significantly influenced by social support. Specifically, those in the low social support (i.e. without the presence of their mother) condition were nearly twice as likely to conclude that the perpetrator was not guilty, compared to those in the high social support (i.e. with mother) condition. This study's findings suggest that the presence of an eyewitness' mother (or perhaps an authority figure) at the time of the crime may influence jurors' verdicts such that when the eyewitness' mother was present rather when the mother was not present, there is a higher likelihood of a guilty verdict or, in this case, siding with the eyewitness.

Until now, research on social support was focused on how social support influences performance on cognitive tasks in children (Burleson et al., 1994; Goodman et al., 1994), illustrating that there is a positive effect on children's memory retention of stressful events (such as a crime) when in the presence of someone that would enhance the social support condition (i.e. a mother; Carter, Bottoms, & Levine, 1996; Davis & Bottoms, 2002). Since these studies clearly show an effect but no former studies examined how a child in a condition of high social support during a crime was perceived by jurors, the present study has contributed to the

understanding of how social support plays a role in the juror decision-making process. Since there are no published studies showing that the average person, or more specifically, a juror, is aware that high social conditions can have a positive effect on memory retention in children during stressful events, it is imperative that future studies better comprehend the current knowledge base of jurors as well as how their perceptions would change if they were informed of the effect that social support has on memory in children. Overall, the findings of this study are laying the groundwork for future discovery of social support and its effects on jurors' perceptions of the eyewitness.

Further, it should be noted that in this present study, 66.5% of mock jurors concluded that the defendant was not guilty ($N = 187$) versus guilty ($N = 94$). This disproportionate not guilty verdict could be influenced by the demographics of the sample of mock jurors. For instance, the age of the mock jurors could have had an effect over their verdict decisions. Perhaps younger jurors are more lenient and liberal with their overall verdict decisions than older eyewitnesses. According to a meta-analysis that investigated the role of juror age on trial outcome, it was observed that conviction rates significantly vary depending on juror age (Anwar, Bayer, & Hjalmarsson, 2013). The cases in this meta-analysis indicated that when the average age of the jury pool was greater than 50-years-old, conviction rates of defendants are greater than when the average age of the jury pool was less than 50-years-old; 79 percent vs. 68 percent, respectively. Moreover, with every year that the average age of the jury pool increased there was a one percent increase in defendant conviction rates. Thus, illustrating a clear relationship between juror age and verdict decisions (Anwar, Bayer, & Hjalmarsson, 2013). As the mock jurors in the current study were younger than the average juror in a trial scenario, it is possible that their age alone influenced their verdict, deciding that a 'Not Guilty' verdict was more appropriate.

Limitations

  Sample sizes of each condition. The sample sizes were significantly different which could have reduced the power when conducting certain statistical analyses such as MANOVA which could have skewed the results of the analysis in this study. The disproportionate sample sizes could have reduced the ability to detect a true effect.

  Manipulation questions. For the presence of social support condition, due to a lack of effective manipulation check (please see explanation in Results section), it is possible that some participants responded based on the understanding of the scenario that was not in line with the intended purpose of the condition. Therefore, there could have been additional noise introduced in that condition based on participants who responded due to a different understanding.

  Further, concerns regarding the familiarity condition include a possible confusion in the manipulation question. The question 'Did the robber make any contact with anyone in the store prior to engaging in the robbery?' could have been considered to lack face validity as well. Although the question specifically asked whether 'contact with anyone in the store' was established, participants could have found that to be confusing. The sample sizes for these conditions could have been affected by this confusion.

  For instance, out of 378 participants, 70 (18.5%) participants answered 'Not Sure' to this question. The number of participants who answered 'Not Sure' was almost twice as more in the *unfamiliar* condition ($N = 46$) than in the *familiar* condition ($N = 24$), further implying that the manipulation was somewhat confusing to participants. Those in the *familiar* condition, where the eyewitness and the perpetrator had a conversation, were more confident in their answer because it was clearly indicated in the transcript. However, those in the *unfamiliar* condition, where the eyewitness simply observed the perpetrator, were less confident in their answer. This suggests

that this question was potentially ambiguous to those in the *unfamiliar* condition. Some participants could have assumed that the store was populated with other shoppers throughout the period in which the perpetrator was wandering the premise and that the fact that the transcript did not explicitly state that the perpetrator did not converse with others, suggested that he could have.

Although the ambiguity influenced the sample sizes for each condition, further examination of participants' open ended responses regarding their verdict rationale, indicated that for those who responded accurately with a 'Yes' or a 'No', the manipulation was salient. Responses in the *familiar* condition include statements such as, "The girl spoke to him and he looked at her so she was able to see him twice" versus responses in the *unfamiliar* condition include statements such as, "The daughter who says she saw him in the store does not seem like a strong witness", clearly indicating that participants were aware of the condition that they were in.

Sampling procedure. The participants of this study were undergraduate students in psychology courses at Carleton University. This was a convenient sample was therefore not randomly selected. As such these students could have had pre-existing notions of forensic psychology topics or other characteristics that may have influenced their choice to participate in this study and the responses that they provided. As noted by Diamond (1997), this type of convenient sample may pose concerns later on due to the difficulties in generalizing the findings to the greater population. More specifically, the population in question, jurors, may not be undergraduate students at all and the juries are rarely only composed of undergraduate students. Further support for the lack of generalizability of undergraduate student samples comes from a report by Bornstein (1999) that noted observations from several studies that used student and

non-student samples in their research. Five out of the 26 studies that Bornstein reviewed illustrated more positive attitudes towards the perpetrator in question drawn from the student samples compared to their non-student counterparts. These differences in perpetrator attitudes could be attributed to the sample populations' higher education or more liberal attitudes (Ostberg & Wetstein, 2007). Either way, this is a difference that should be noted.

In a real trial scenario, the composition of a jury would rarely only include jurors who are on average 20-years-old. In fact, according to an analysis done by Carnegie Mellon University that used data from over 700 felony trials in Florida, the average age of jurors was 49.6 (Anwar, Bayer, Hjalmarsson, 2013). Thus, a valuable improvement to future studies would be to include mock jurors of varying ages in order to simulate a true trial scenario.

Conclusions and Implications

The understanding of how eyewitnesses are perceived by jurors is of utmost importance, especially when there have been numerous of recorded studies of juror bias influencing their verdict decision-making. As there are infinite amount of variables that come into play during a trial, the road does not end here. This can be seen as the beginning of the unravelling of a few important variables – eyewitness age, familiarity, and social support.

The present study has added to the comprehension of how potential jurors may respond to different factors of an eyewitness' testimony. The significant findings emphasize the weight that mock jurors place on social support of the eyewitness when coming to a verdict decision in the trial. In line with previous studies, there were no significant findings that could shed light in regards to jurors' perceptions of eyewitness who are familiar with the perpetrator. Lastly, contradictory to the findings of former juror studies, the age of the eyewitness was not a factor that appeared to influence mock jurors' decision-making.

Though few significant findings were found, they could lead to some important future research. As mock jurors' verdicts appear to be influenced by eyewitness in high social support conditions, it is vital that future research unearth the true mechanisms of this phenomenon. Researchers must replicate this finding and understand how eyewitnesses are perceived when a supportive figure is present (high social condition) at the time of the crime in order to better equip future jurors with the knowledge that this change in perception exists.

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Appendix A
SONA Study Recruitment Notice

Study Name: Factors influencing the juror decision-making process: A criminal trial investigation

Description: Participation in this study will require that you read the transcript of a trial involving an armed robbery. You will be asked to complete some questionnaires requesting your demographic information, to determine a verdict in the case, and your thoughts and opinions on the case you read.

Eligibility Requirements: Must be 18 years old or older and to be fluent in reading English.
Duration: approximately 30 minutes
Location: Online via a Qualtrics link provided on SONA
Compensation: 0.5% in PSYC 1001, PSYC 1002, PSYC 2001, PSYC 2002, NEUR 2001, or NEUR 2002
Researchers
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Faculty Advisor: Dr. Joanna Pozzulo

This research has been approved by the Carleton University Research Ethics Board-B (Protocol #XX-XXX) and (Date of ethics expiration).

Appendix B

Trial Transcript

Please read the following carefully.

This is an excerpt of a trial involving a convenience store robbery. The sections below consist of the witness' testimony as well as that of others.

Judge: Mr. Hendrick has been charged with section 344 of the criminal code; armed robbery. Under the law, the Crown has the burden of proving that the defendant is guilty beyond a reasonable doubt. As jurors, it is your responsibility to decide the facts, to listen to all evidence and to apply the law that I will give you at the end of the trial. The case will commence with the Crown and the Defense giving opening statements. These statements are not evidence, but rather summaries of what they will present throughout the trial. Each lawyer will then present and question witnesses and law enforcement personnel and they will be subsequently cross-examined. Following the testimonies you will be asked to make a decision as to whether the defendant is guilty or not guilty.

The Crown makes their opening statement.

Crown: Mr. John Hendrick is a 20 year-old male. On the evening of April 29th, 2014, unannounced, Mr. Hendrick arrived at Ms. Julie Richardson's family convenience store, a subsection of her residence, and held the store clerk at gunpoint as he stole electronics such as a speaker, a DVD player, and cash from the store. When Mr. Hendrick was finished taking what he wanted he fled the scene of the crime, an act that was witnessed by Ms. Richardson's daughter, Katie. As a consequence for his actions, it is your duty as representatives of the community to seek justice by finding Mr. Hendrick guilty of armed robbery.

The Defence makes their opening statement.

Defence: Mr. Hendrick did not commit the act of robbing a convenient store while holding a store clerk at gunpoint on the evening of April 29th, 2014. What happened to Ms. Richardson was a very serious crime, but it was not committed by John Hendrick. The only reason that Mr. Hendrick is here today is that he roughly matches the limited description given by a witness who was in the store at the time of the crime. To accuse Mr. Hendrick of armed robbery is outrageous, and I hope that you will consider all of the facts accordingly and ultimately decide that my client is indeed not guilty.

The Crown calls their first witness, Detective Richard Lynch, and he takes the stand.

Crown: Please state your full name for the court, and your position with the local police.

Witness: My full name is Richard William Lynch and I have been a robbery detective with the local police for 15 years.

Crown: Please describe how Mr. Hendrick became a suspect in Ms. Richardson's case.

Witness: On the evening of April 290th, police responded to a 911 call at the subdivision on Riles Drive where Ms. Richardson lives. It was at this time that I learned of the close proximity of Mr. Hendrick, the local pizza delivery boy. It was the link between him being the local pizza delivery boy at Mr. P-Eats and the fact that Ms. Richardson's store recently started selling electronics to customers and that she is known for her monthly bank visits where she deposits the cash earnings (kept at the store), just a day later, on the 30th of every month. She is a single mom with only one employee, the store clerk, which makes her store an easy target from which he could obtain these semi expensive items and instant cash, as well as the ease at which he could access the store, that we began to suspect him.

Crown: How were you able to make a positive identification that this was the man who had robbed Ms. Richardson's store?
Witness: We put together a lineup which consisted of 6 photos, 1 of which was Mr. Hendrick. We then showed them to Ms. Richardson's daughter, Katie, to see if she could identify the criminal. She made a positive ID on one of the photos, she pointed to number three and said, he robbed our store. Number three was Hendrick's picture.

The Defence cross examines the witness.

Defense: Where did you show the lineup to her?
Witness: I showed it to her at her grandmother's home, as that was who Ms. Richardson and her daughter were staying with after their store had been robbed.
Defense: And this is where the identification took place?
Witness: Yes.
Defense: What led the police to put Mr. Hendrick's picture in the lineup?
Witness: Mr. Hendrick's job of being the pizza delivery boy in the subdivision and where he lived were the reasons that his picture was initially put in the lineup.
Defense: Did the young Ms. Richardson hesitate when making the identification?
Witness: She hesitated for a few moments, but then positively identified Mr. Hendrick as the one who robbed their convenience store.
Defence: Thank you, no further questions.

The Crown calls their second witness, Stacy Drone, and she takes the stand.

Crown: Hello Stacy, can you please state your full name for the court.
Witness: My name is Stacy Drone.
Crown: How is it that you make your living Stacy?
Witness: I am a dog trainer.
Crown: How do you know Ms. Richardson?
Witness: We live in the same subdivision on Riles Drive.
Crown: Have you ever seen Mr. Hendrick before?
Witness: Yes, a few times.
Crown: When and what was Mr. Hendrick doing?
Witness: I have seen him delivering pizzas to residences in the subdivision, including Ms. Richardson's store and residence.
Crown: Thank you Stacy, no further questions your honour.

The Defence cross examines the witness.

Defence: Stacy, how long have you been living in the subdivision?
Witness: About five years.
Defence: How long ago did you see Mr. Hendrick delivering a pizza to Ms. Richardson's store?
Witness: It was near the end of March, I can't remember the exact date though.
Defence: Have you seen Mr. Hendrick since that time?
Witness: No.
Defence: When you saw Mr. Hendrick, did he ever appear or act suspicious?

Witness: No, nothing out of ordinary.
Defence: Thank you Stacy, nothing further your honour.

The Crown calls their third witness, Katie Richardson, and she takes the stand.

Crown: Hello Katie, can you please tell everyone how old you are?
Witness: I am **10 years old/15 years old/20 years old.**
Crown: Can you please tell the court where you were on the evening of April 29th, 2014?
Witness: I was waiting for my mother in her store.
Crown: Was there anyone else in the store when you were waiting?
Witness: Yes, my mother was in the back getting something./Yes, my mother was beside me getting something off the shelf.
Crown: What happened while you were waiting?
Witness: A man approached me and asked where the chips were./A man was beside me looking at chips.
Crown: How long did you see this man for?
Witness: Maybe a minute.
Crown: And then what happened?
Witness: The man went to the front of the store, scared the store clerk, Mrs. Jones, asked for cash.
Crown: What happened after that?
Witness: The man turned and looked at me, then ran out of the store with the cash in his hands.
Crown: What did the man look like?
Witness: He was tall and had brown hair and he wore a black jacket and jeans with holes in them.
Crown: How did he scare Mrs. Jones? Did he have any type of weapon on him?
Witness: I think he had a knife in his hand, something shiny.
Crown: Is the man you saw in the court room today?
Witness: Yes.
Crown: Can you point him out?
Witness: Yes, there. (witness points to Mr. Hendrick)
Crown: Have you seen this man before the day of the robbery?
Witness: No.
Crown: Can you please describe some of the circumstances in which you have seen the defendant before?
Witness: No, I have never seen him before.
Crown: Thank you, no further questions your honour.

The Defence cross examines the witness.

Defence: Can you please tell us what time you were waiting for your mother in the store?
Witness: I don't remember. It was sometime after dinner.
Defence: Were all the lights on in the store?
Witness: Some of them were on.
Defence: Would you agree Katie, that when it is dark out, people have a harder time seeing things?

Witness: Yeah, I guess so.
Defence: If not all the lights were on, how can you be sure that it was Mr. Hendrick who was taking things from the store?
Witness: I saw him.
Defence: Can you please describe what the person you saw was wearing?
Witness: A black jacket and jeans with holes in them.
Defence: Do you remember anything else about the person you saw?
Witness: Sunglasses on top of his head.
Defence: Anything else?
Witness: No.
Defence: Thank you Katie, no further questions your honour.

The Defence calls their first witness, Lily Peters, and she takes the stand.

Defence: Please state your full name for the court.
Witness: My name is Lily Peters.
Defence: How is that you make your income Lily?
Witness: I make pizzas at Mr. P-Eats.
Defence: Have you ever seen Mr. Hendrick before?
Witness: Yes, we work together.
Defence: Have you ever seen Mr. Hendrick take anything over the course of your employment together?
Witness: No, I have not. He has always seemed very nice.
Defence: Thank you Lily. No further questions.

The Crown cross examines the witness.

Crown: How long have you been making pizzas?
Witness: About three and a half years.
Crown: Has Mr. Hendrick ever borrowed money from you?
Witness: Yes, a few times.
Crown: Was Mr. Hendrick able to pay you back?
Witness: Yes, but not always in cash.
Crown: What do you mean by that?
Witness: Well, once he said he was short on cash but he could give me something of equal value, such as a new cellphone.
Crown: And did he pay you in that way?
Witness: Yes.
Crown: Nothing further your honour.

The Defence calls their second witness, Trisha Summers, and she takes the stand.

Defence: Please state your full name for the court.
Witness: My name is Trisha Summers.
Defence: How is it that you know Mr. Hendrick?
Witness: He has delivered pizza to my house before.

Defence: Did you ever have any problems with Mr. Hendrick?
Witness: No.
Defence: He never gave you any indication that he was untrustworthy?
Witness: No, he seemed like a nice kid.
Defence: So you would say you were happy with his services?
Witness: Yes. He was friendly and always on time.
Defence: Nothing further your honour.

The Crown cross examines the witness.

Crown: How long has Mr. Hendrick been delivering pizza to your house?
Witness: About two years.
Crown: Were you always home when he delivered pizza to your residence?
Witness: Yes, I believe I have been home every time he has come.
Crown: Was he ever in your house for any other reason?
Witness: No. He only came when we ordered pizza.
Crown: Did he ever enter the house?
Witness: No, he would wait till we answered the door to take our pizza order.
Crown: Nothing further your honour.

The Defence calls their third witness, the defendant, John Hendrick, and he takes the stand.

Defence: Please state your full name for the court John.
Witness: John Nick Hendrick.
Defence: Mr. Hendrick, where were you on the night of April 29th, the night Ms. Richardson's convenience store was robbed.
Witness: At home, I wasn't feeling too well so I went to bed early.
Defence: Mr. Hendrick, do you own a black jacket and jeans with holes in them?
Witness: Yes, but so do a lot of people I know.
Defence: How about sunglasses?
Witness: Yea, but like I said, so do a lot of people.
Defence: Have you ever seen Ms. Richardson before?
Witness: Yes, I have delivered pizza to her store and her neighbours' house a few times.
Defence: When was the last time you delivered pizza in that area?
Witness: March or so.
Defence: Did you ever carry a weapon on you while working in the area?
Witness: I carry a swiss army knife, I guess you could consider that a weapon.
Defence: Nothing further your honour.

The Crown cross examines the defendant.

Crown: You say you were home in bed the night of April 29th, 2014?
Witness: Yes.
Crown: Do you have any witnesses to that, was your girlfriend there with you?
Witness: No, she wasn't there with me.
Crown: So no one can prove that you were in bed?

Witness: No, I guess not.
Crown: Would you say it is accurate that you have had money issues in the past?
Witness: Yes, but I always get it worked out.
Crown: Do you work at Mr. P-Eats during the whole year?
Witness: No, I am hired for the summer when their permanent staff, students from the local university, are away.
Crown: What about times you had to pay someone back in other months, let's say December for example.
Witness: I borrowed money from someone else.
Crown: No further questions your honour.

The witness is excused and closing statements are made.

Crown: You have heard the testimony from a number of witnesses today that have given you information about the robbery of Ms. Julie Richardson's convenience store, and the man who has been identified as the culprit. As jurors, it is your job to determine, based on this information, whether or not John Hendrick is beyond a reasonable doubt, guilty of the crime of armed robbery. Let me review some of the most important facts that you should use to come to your decision of guilty; please remember that Mr. Hendrick frequents that area regularly as he delivers pizzas. Additionally, Ms. Richardson is a single mom which makes her an easy target which provided Mr. Hendrick with ample opportunity to enter and rob Ms. Richardson's store. Lastly and most importantly, Ms. Richardson's **10/15/20** year-old daughter **saw the robber shopping /spoke to the robber at the store** that evening, and picked John Hendrick out of a lineup. With this compelling evidence presented to you, I urge you to find the accused, John Hendrick, guilty of robbery. Thank you.

Defence: The prosecution has attempted to provide evidence against Mr. Hendrick that would find him guilty beyond a reasonable doubt, but unfortunately, this evidence is questionable at best. The only reason police initially arrested Mr. Hendrick was because he lives near the area and delivers pizza in that subdivision. These details are not sufficient to indicate Mr. Hendrick is guilty of armed robbery. None of the testimony you have heard today has provided evidence that he is guilty of this crime. Additionally, Katie Richardson's identification of Mr. Hendrick should not be used in your decision, as she **saw/spoke to** the man who robbed her store in darkness and only for a short period of time. Taking all of these things into consideration, it is imperative that you find Mr. Hendrick not guilty. Thank you.

Judge: Members of the jury, you have heard the testimony from a number of witnesses. It is now my responsibility to provide you with the law.

343. Every one commits robbery who
(a) steals, and for the purpose of extorting whatever is stolen or to prevent or overcome resistance to the stealing, uses violence or threats of violence to a person or property;
(b) steals from any person and, at the time he steals or immediately before or immediately thereafter, wounds, beats, strikes or uses any personal violence to that person;
(c) assaults any person with intent to steal from him; or
(d) steals from any person while armed with an offensive weapon or imitation thereof.

R.S., c. C-34, s. 302.

Mr. Hendrick has been charged with the following:

ROBBERY—Robbery is an indictable offence in which:

344. (1) Every person who commits robbery is guilty of an indictable offence and liable
(a) if a restricted firearm or prohibited firearm is used in the commission of the offence or if any firearm is used in the commission of the offence and the offence is committed for the benefit of, at the direction of, or in association with, a criminal organization, to imprisonment for life and to a minimum punishment of imprisonment for a term of
        (i) in the case of a first offence, five years, and
        (ii) in the case of a second or subsequent offence, seven years;
        (a.1) in any other case where a firearm is used in the commission of the offence, to imprisonment for life and to a minimum punishment of imprisonment for a term of four years; and
(b) in any other case, to imprisonment for life.

Please take into consideration all the information you have heard today, and do not let any biases you may have come into your decision-making process.

Please proceed to the next section and answer questions based on what you have read.

Appendix C
Participant Demographics Questionnaire

Your age:_____
Your sex:_____
Ethnicity: Please indicate which ethnic group you would consider yourself to belong to (optional):
- White (e.g., European)
- Black (e.g., African, African American, African Canadian, Caribbean)
- East Asian (e.g., Chinese, Japanese, Korean, Polynesian)
- South Asian (e.g., Indian, Pakistani, Sri Lankan, Bangladeshi)
- Southeast Asian (e.g., Burmese, Cambodian, Filipino, Laotian, Malaysian, Thai, Vietnamese)
- West Asian (e.g., Arabian, Armenian, Iranian, Israeli, Lebanese, Palestinian, Syrian, Turkish)
- Latin American (e.g., Mexican, Indigenous Central, South American)
- Aboriginal Canadian/Native Canadian/First Nations
- Mixed origin, please specify:_____
- Other:_____

Appendix D

Verdict

Please answer the following questions based on the testimony you have just read.

1. On a scale of 1-100, rate the degree to which you feel the defendant, Mr. John Hendrick, is guilty or not guilty (0-*definitely not guilty*; 100-*definitely guilty*).
   Your rating:_____

2. Would you find the defendant GUILTY or NOT GUILTY based on the testimony you just read?
   Please check your answer.

   Guilty [   ]   Not Guilty [   ]

3. Please describe why you reached the verdict you chose.

   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____.

Appendix E

Eyewitness Ratings

In relation to the primary eyewitness, Katie Richardson, please answer the following questions:
Note: The below terms are defined to assist you in answering the following questions.

Reliability: the ability to be relied on or depended on, as for accuracy, honesty, or achievement.

1. How *reliable* do you find the witness' testimony to be?

1.........10.........20.........30.........40.........50.........60.........70.........80.........90.........100
Not at all Reliable   Very Reliable

2. How *reliable* do you find the witness' description of the crime to be?

1.........10.........20.........30.........40.........50.........60.........70.........80.........90.........100
Not at all Reliable   Very Reliable

3. How *reliable* do you find the witness' description of the perpetrator to be?

1.........10.........20.........30.........40.........50.........60.........70.........80.........90.........100
Not at all Reliable   Very Reliable

Credibility: the quality of being believable or worthy of trust.

4. How *credible* do you find the witness' testimony to be?

1.........10.........20.........30.........40.........50.........60.........70.........80.........90.........100
Not at all Credible   Very Credible

5. How *credible* do you find the witness' description of the crime to be?

1.........10.........20.........30.........40.........50.........60.........70.........80.........90.........100
Not at all Credible   Very Credible

6. How *credible* do you find the witness' description of the perpetrator to be?

1.........10.........20.........30.........40.........50.........60.........70.........80.........90.........100
Not at all Credible   Very Credible

Accuracy: the condition of being true, correct, or exact.

7. How *accurate* do you find the witness' testimony to be?

1.........10.........20.........30.........40.........50.........60.........70.........80.........90.........100

Not at all Accurate   Very Accurate

8. How *accurate* do you find the witness' description of the crime to be?

1..........10..........20..........30..........40..........50..........60..........70..........80..........90..........100
Not at all Accurate   Very Accurate

9. How *accurate* do you find the witness' identification of the perpetrator to be?

1..........10..........20..........30..........40..........50..........60..........70..........80..........90..........100
Not at all Accurate   Very Accurate

Appendix F
Questionnaire (Manipulation check)

Please answer the following questions by circling your answer.

1. Where did the crime take place?
    a. Mall.
    b. Bank.
    c. Convenience Store.
    d. Park.
Answer: Convenience Store

2. Was the witness in the presence of another person?
    a. Yes
    b. No
    c. Not sure
Answer: Dependent on the transcript presented.

3. Did the robber make any contact with anyone in the store prior to engaging in the robbery?
    a. Yes
    b. No
    c. Not sure
Answer: Dependent on the transcript presented.

4. What did the culprit steal?
    a. Cash and Electronics
    b. Food
    c. Toilet Paper
    d. Clothes
    e. Unknown
Answer: Cash and Electronics

5. How old was the primary eyewitness?
    a. 5
    b. 10
    c. 15
    d. 20
Answer: Dependent on the transcript presented.

Appendix G

Informed Consent Form

The purpose of informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. Informed consent must provide sufficient information such that you have the opportunity to determine whether or not you wish to participate in the study.

Present study: Factors influencing the juror decision-making process: A criminal trial investigation

Research personnel: The following people will be involved in this research project and may be contacted at any time: Eropa Stein (Student, Principal Investigator, eropastein@cmail.carleton.ca, 613-520-2600, ext. 3695) or Dr. Joanna Pozzulo (Faculty Advisor, Joanna.Pozzulo@carleton.ca, 613-520-2600, ext. 1412).

Concerns: If you should have any ethical concerns about this study please contact, Dr. Shelley Brown (Chair, Carleton University Research Ethics Board-B, shelley.brown@carleton.ca, 613-520-2600, ext. 1505) or email the Carleton University Research Office at ethics@carleton.ca.

Purpose: The purpose of this study is to examine mock jurors' judgments concerning a case where an eyewitness testimony is presented.

Task requirements: You will be asked to read a transcript of a trial involving an armed robbery. You will be asked to complete some questionnaires requesting your demographic information, thoughts and opinions on the case you read, and to determine a verdict in the case.

Duration and locale: This study will be completed online in one testing session that will last approximately 30 minutes.

Remuneration: You will receive a .5% increase in your final grade up to a maximum of 4% in PSYC 1001, PSYC 1002, PSYC 2001, PSYC 2002, NEUR 2001, or NEUR 2002 for participating in this study.

Potential risk/discomfort: There are no potential physical risks involved in this experiment. There is a slight risk for discomfort when reading about a trial involving an armed robbery. Should you experience any unease, you have the right to withdraw from the study without penalty, and you will still receive the 0.5% credit.

Anonymity/Confidentiality: The data collected in this experiment are strictly confidential. All data are coded such that your name is not associated with the responses you provide. Any identifying information associated with your code will be confined to a single page that will be separated from your questionnaire, and kept in a separate, secured file by the research investigators, who will keep this information confidential. We collect data through the software Qualtrics, which uses servers with multiple layers of security to protect the privacy of the data (e.g., encrypted websites and pass-word protected storage). Further, IP addresses will not be collected. Please note that Qualtrics is hosted by a server located in the USA. The United States Patriot Act permits U.S. law enforcement officials, for the purpose of an anti-terrorism investigation, to seek a court order that allows access to the personal records of any person without that person's knowledge. In view of this we cannot absolutely guarantee the full confidentiality and anonymity of your data. With your consent to participate in this study you

acknowledge this. Your name and e-mail will be kept in our participant database so that we can keep track of who has completed our study. This database will be kept for two years, and then destroyed. The information in this database cannot be matched to your responses. All the information you provide will be strictly confidential. These data will only be used for research at Carleton University. The findings from this research study may be used for teaching purposes or for publication purposes. If published, the data will be published in aggregate form and as such, no identifying information will be linked to the results.

Right to withdraw: In addition, you may refrain from answering any questions on the questionnaire if you are uncomfortable or otherwise do not want to. At any point in the study, you may withdraw without penalty. At the end of the study, you will be asked if you would like to withdraw your data from the study and will have the option of doing so immediately if you should so wish.

This research has been approved by the Carleton University Research Ethics Board-B (Protocol #XX-XXX) and (Date of ethics expiration).

- *I have read the above form and understand the conditions of my participation. My participation in this study is voluntary, and I understand that if at any time I wish to leave the experiment, I may do so without having to give an explanation and with no penalty whatsoever. Furthermore, I am also aware that the data gathered in this study are confidential and anonymous with respect to my personal identity.* **By checking this box, I'm indicating that <u>I agree to participate in this study.</u>**

- *I have read the above form and understand the conditions of my participation. My participation in this study is voluntary, and I understand that if at any time I wish to leave the experiment, I may do so without having to give an explanation and with no penalty whatsoever. Furthermore, I am also aware that the data gathered in this study are confidential and anonymous with respect to my personal identity.* **By checking this box, I'm indicating that <u>I disagree to participate in this study.</u>**

Appendix H
Debriefing Form
What are we trying to learn in this research?
The purpose of this experiment is to find out what potential jurors think about a case involving an armed robbery where the eyewitness is somewhat familiar with the perpetrator and the eyewitness is in the presence of a person that could provide them with social support. In this study, we were particularly interested in how you were influenced by the age of the eyewitness (10, 15, or 20), the degree of familiarity with the perpetrator (5 minute conversation with perpetrator vs. 5 minutes of watching perpetrator), and the presence of social support (alone vs. with a mother). All participants were asked to make a verdict decision and to rate the perpetrator and eyewitness.
Note: The trial transcript used in this study was entirely fictional. It was designed solely for the use of this study and there is no actual verdict for this specific case.

Why is this important to scientists or to the general public?
To date, there is limited research informing the Canadian court system of how jurors would feel and react to a case of this kind. This research is important because it can help the legal system in knowing how potential jurors may respond to a case concerning a young eyewitness.
What are our hypotheses and predictions?
It is hypothesized that jurors would be more inclined to believe an older eyewitness, age 15 or 20, over a younger eyewitness, age 10, as past research indicates that child witnesses of crimes such as robbery are perceived as less credible. It is also hypothesized that jurors will be more likely to convict the perpetrator when the eyewitness is older and has had a 5 minute conversation with the perpetrator (vs. no conversation with the perpetrator). It is also hypothesized that younger eyewitnesses who witnessed the crime in the presence of a supportive figure will be deemed more credible than those who witnessed the crime alone.
Where can I learn more?
Arkowitz, H., & Lilienfeld, S. O. (2009, January 8). Why Science Tells Us Not to Rely on Eyewitness Accounts. Scientific American. Retrieved from http://www.scientificamerican.com/article/do-the-eyes-have-it/

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*(5), 447-459. doi: 10.1111/j.1559-1816.1986.tb01151.x

Loftus, E. F. (2011, September 1). Juries don't understand eyewitness testimony. The New York Times. Retrieved from http://www.nytimes.com/roomfordebate/2011/08/31/can-we-trust-eyewitness-identifications/juries-dont-understand-eyewitness-testimony

Pozzulo, J. D, Pettalia, J. L., Bruer, K., & Javaid, S. (2014). Eyewitness age and familiarity with the defendant: Influential factors in mock jurors' assessment of guilt. *The American journal of forensic psychology, 32*(1), 39-51.

What if I have questions later?

If you wish to discuss this research any further feel free to contact any one of the following people: Eropa Stein (Student, Principal Investigator, eropastein@cmail.carleton.ca, 520-2600, ext. 3695) or Dr. Joanna Pozzulo (Faculty Advisor, Joanna.pozzulo@carleton.ca, 520-2600, ext. 1412).

Concerns: If you should have any ethical concerns about this study please contact, Dr. Shelley Brown (Chair, Carleton University Research Ethics Board-B, shelley.brown@carleton.ca, 613-520-2600, ext. 1505) or email the Carleton University Research Office at ethics@carleton.ca.

What if I feel distress or anxiety after participating in this study?

If you feel any distress or anxiety after participating in this study, please feel free to contact the Carleton University Health and Counseling Services at: 613-520-6674, or the Distress Centre of Ottawa and Region at 613-238-3311 (http://www.dcottawa.on.ca).

This research has been approved by the Carleton University Research Ethics Board-B (Protocol #XX-XXX) and (Date of ethics expiration).

At this time we would like to thank you for taking the time to take part in this study. Your participation has been greatly appreciated!

APPENDIX I
Cell Size Table

Cell sizes for each experimental condition

	Cell Size
Eyewitness Age – 10 Years Old	
Familiar - Alone	37
Familiar – With Mother	22
Unfamiliar - Alone	22
Unfamiliar – With Mother	21
Eyewitness Age – 15 Years Old	
Familiar - Alone	25
Familiar – With Mother	27
Unfamiliar - Alone	18
Unfamiliar – With Mother	17
Eyewitness Age – 20 Years Old	
Familiar - Alone	31
Familiar – With Mother	23
Unfamiliar - Alone	19
Unfamiliar – With Mother	19

* Total N = 281

APPENDIX J
Correlation Table

Correlations between reliability, credibility, and accuracy ratings of mock jurors.

	R1	R2	R3	C1	C2	C3	A1	A2	A3
How *reliable* do you find the witness' testimony to be? (R1)	1	.74**	.74**	.72**	.66**	.65**	.72**	.64**	.67**
How *reliable* do you find the witness' description of the crime to be? (R2)		1	.68**	.59**	.70**	.57**	.68**	.69**	.59**
How reliable do you find the witness' description of the perpetrator to be? (R3)			1	.66**	.59**	.80**	.72**	.61**	.79**
How *credible* do you find the witness' testimony to be? (C1)				1	.74**	.78**	.74**	.65**	.66**
How credible do you find the witness' description of the crime to be? (C2)					1	.71**	.67**	.72**	.61**
How credible do you find the witness' description of the perpetrator to be? (C3)						1	.72**	.61**	.80**
How accurate do you find the witness' testimony to be? (A1)							1	.83**	.81**
How accurate do you find the witness' description of the crime to be? (A2)								1	.70**
How accurate do you find the witness' identification of the perpetrator to be? (A3)									1

$*p < .05, **p < .01.$