Neal, T.M.S., Christiansen, A., Bornstein, B.H., & Robicheaux, T. (2012). The effects of mock jurors' beliefs about eyewitness performance on trial judgments. *Psychology, Crime, & Law*, 18, 49-64. doi: 10.1080/1068316X.2011.587815

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The Effects of Mock Jurors' Beliefs about Eyewitness Performance on Trial Judgments

Tess M.S. Neal, Ashley Christiansen, Brian H. Bornstein, & Timothy R. Robicheaux

University of Nebraska-Lincoln

Author Note

Tess M.S. Neal, Ashley Christiansen, Brian H. Bornstein, & Timothy R. Robicheaux, Department of Psychology, University of Nebraska-Lincoln.

Tess M.S. Neal is now affiliated with the Department of Psychology, The University of Alabama. Timothy R. Robicheaux is now affiliated with the Department of Psychology, The Pennsylvania State University.

This paper reports the results from undergraduate honors theses by the first and second authors under the supervision of the third author.

Correspondence concerning this article should be addressed to Brian H. Bornstein, Department of Psychology, 335 Burnett Hall, University of Nebraska, Lincoln, NE, 68588-0308. E-mail: bbornstein2@unl.edu

Abstract

Two experiments examined how mock jurors' beliefs about three factors known to influence eyewitness memory accuracy relate to decision-making (age of eyewitness and presence of weapon in Study 1, length of eyewitness identification decision time in Study 2). Psychology undergraduates rendered verdicts and evaluated trial participants after reading a robbery-murder trial summary that varied eyewitness age (6, 11, 42, or 74 years) and weapon presence (visible or not) in Study 1 and eyewitness decision length (2-3 or 30 seconds) in Study 2 (n=200 each). The interactions between participant belief about these variables and the manipulated variables themselves were the heart of this study. Participants' beliefs about eyewitness age and weapon presence interacted with these manipulations, but only for some judgments – verdict for eyewitness age and eyewitness credibility for weapon focus. The exploratory meditational analyses found only one relation: juror belief about eyewitness age mediated the relation between eyewitness age and credibility ratings. These results highlight a need for juror education and specialized *voir dire* in cases where legitimate concerns exist regarding the reliability of eyewitness memory (e.g., child eyewitness, weapon presence during event, long eyewitness identification time). If erroneous juror beliefs can be corrected their impact may be reduced.

Keywords: eyewitness testimony, eyewitness age, weapon focus, eyewitness identification speed, juror belief

The Effects of Jurors' Beliefs about Eyewitness Performance on Trial Judgments

Eyewitness evidence is one of the most compelling types of evidence presented at trial, as jurors place great weight on the testimony of eyewitnesses (Devenport, Penrod, & Cutler, 1997; Lindsay, 1994; Penrod & Cutler, 1995). However, laypeople are often naive to the value of various predictors of eyewitness memory accuracy, the consequences of which may be jurors making judgments based in part on erroneous intuitions (Benton, Ross, Bradshaw, Thomas, & Bradshaw, 2006; Deffenbacher & Loftus, 1982; Devenport et al., 1997; Kassin & Barndollar, 1992; Lindsay, 1994; Read & Desmarais, 2009). For instance, jurors assume a positive correlation between eyewitness confidence and accuracy; in fact, the most powerful predictor of mock jurors' verdicts is eyewitness confidence (Cutler, Penrod, & Dexter, 1990; Cutler, Penrod & Stuve, 1988). However, contrary to jurors' beliefs, eyewitness confidence is not a strong indicator of accuracy (Penrod & Cutler, 1995; Sporer, Penrod, Read, & Cutler, 1995).

Other research has demonstrated potential jurors do not appreciate many factors related to eyewitness accuracy. For example, the impact of the cross-race effect or how lineup instructions can affect eyewitness identification is not well understood (Lindsay, 1994); the ability of hypnosis to aid memory retrieval is overestimated, and the effects of exposure time, lineup selection procedures, and hypnotic suggestibility are underestimated (Kassin & Barndollar, 1992); and arousal's negative impact on accurate recall is not appreciated (Bornstein, Zickafoose, & O'Bryant, 2008). Other factors that may predict eyewitness accuracy include age of the eyewitness, whether or not a weapon was present during the occurrence of the crime, and the length of time it takes the eyewitness to identify a perpetrator during a lineup. Researchers have examined the effects of these variables on juror decisions; however, jurors' beliefs about these variables and the effects of those beliefs on decisions have not been empirically examined.

Age of the Eyewitness

An abundance of research has addressed age effects on eyewitness memory. The ability to retain accurate descriptive information in memory after witnessing an event increases with age (Leippe & Romanczyk, 1989; Poole & White, 1991; Roebers & Schneider, 2001), as does accurate face identification (Pozzulo & Lindsay, 1998). However, elderly adults perform significantly worse than younger adults at face-recognition tasks (Bartlett & Memon, 2007), and they have less accurate memories and are disproportionately influenced by erroneous suggestions compared to younger adults (Mueller-Johnson, 2005). Thus it appears young to middle adulthood is the peak age range for eyewitness performance accuracy.

Laypeople regard the age of an eyewitness as important for determining the accuracy of eyewitness identification (Golding, Dunlap, & Hodell, 2009; Holcomb & Jacquin, 2007; Leippe, Manion, & Romanczyk, 1992; Newcombe & Bransgrove, 2007; Pozzulo & Dempsey, 2009; Pozzulo, Lemieux, Wells, & McCuaig, 2006; Ross, Dunning, Toglia, & Ceci, 1990). However, surveys assessing experts' (Kassin, Tubb, Hosch, & Memon, 2001) and laypersons' (Benton et al., 2006) beliefs about factors affecting eyewitness accuracy demonstrate experts are significantly more likely to agree that young children and elderly eyewitnesses are less accurate than younger adults, indicating jurors may rely on erroneous beliefs in decision-making.

A number of jury simulations have examined the effect of eyewitness age on mock jurors' decisions, especially in the context of child sexual abuse (CSA) cases (Bottoms, Golding, Stevenson, Wiley, & Yozwiak, 2007), where a majority of jurors cite the child's testimony as the most important evidence (Myers, Redlich, Goodman, Prizmich, & Imwinkelried, 1999). Jurors generally perceive younger children as less cognitively capable than older children or adults, but as more trustworthy and honest; in the case of CSA or other sex crimes, children's credibility is

also aided by the perception that they are more sincere and sexually naive (Bottoms et al., 2007). Less research has studied jurors' perceptions of elderly witnesses, but there is evidence that they are perceived as less cognitive capable yet more honest than young adults (Ross et al., 1990).

The Weapon Focus Effect

A second factor demonstrated to predict eyewitness accuracy is weapon presence during the commission of a crime. The presence of a weapon can reduce the ability to recall details unrelated to the weapon (e.g., clothing and characteristics of the suspect; Pickel, 2007; Shaw & Skolnick, 1994; Steblay, 1992), and reduces the probability of an eyewitness identifying the offender (Pickel, 2007). Surveys assessing expert (Kassin et al., 2001) and laypersons' (Benton et al., 2006; Read & Desmarais, 2009) beliefs about factors affecting eyewitness accuracy indicate experts better appreciate memory limitations when a weapon is present, suggesting again that jurors may make decisions based partially on erroneous beliefs. However, we know of no studies of juror or jury decision making as a function of weapon presence/absence.

Length of Identification Time during Lineups

A third factor that predicts the accuracy of eyewitness identification is the length of time the identification takes during a lineup. Faster identifications are, in general, more likely to be correct than slower decisions (Dunning & Stern, 1994; Sauerland & Sporer, 2009; Sporer, 1993, 1994). Nevertheless, there is considerable variability in opinions about identification speed (Benton et al., 2006; Read & Desmarais, 2009). The pattern suggests many mock jurors believe fast identifications are more accurate and may base decisions on that belief; however, there is not a strong expert consensus on whether identification speed has any relation to accuracy, despite several studies suggesting such a relationship. In addition, there have been no studies of how mock jurors respond to variations in eyewitness identification speed.

The Present Research

We conducted two studies to determine how mock jurors' beliefs about three factors relate to their decision making (age of the eyewitness and presence of a weapon in Study 1, and length of eyewitness identification decision time in Study 2). We chose these three factors not because they exhaust all of the factors about which jurors might have erroneous beliefs, but because of their prevalence in a large number of witnessing and identification situations. In these studies, college students serving as mock jurors read a simulated criminal trial in which we varied the level of the three variables (eyewitness age, weapon presence, and identification time) to determine whether mock jurors' beliefs were related to their trial decisions.

Study 1: Eyewitness Age and Weapon Presence.

Study 1 examined the relations between mock jurors' judgments and their beliefs regarding eyewitness age and weapon presence. Overall, we hypothesized mock jurors would be somewhat sensitive to these factors, and that their beliefs would be related to their trial judgments. Specifically, we predicted: (1) A main effect of eyewitness age, such that more not-guilty verdicts will be rendered when the eyewitness is a child or elderly adult (compared with a middle-aged adult). Young and elderly adult eyewitnesses will also be less credible, and will lead to perceptions of lower defendant culpability. Although child and elderly witnesses can be quite credible when the major component of credibility is their honesty or sincerity (e.g., in CSA cases), they are less credible than young adult witnesses when the case emphasizes cognitive competence (Bottoms et al., 2007). In the case used here, the eyewitness is a bystander with no motivation to lie, leading to the predicted age effect. (2) A main effect of weapon presence, such that weapon presence will lead to more not guilty verdicts, lower defendant culpability, and lower eyewitness credibility. (3) An interaction between eyewitness age and participant belief

about the effects of eyewitness age on reliability. Specifically, participants who believe younger eyewitnesses are less reliable will render more negative judgments when a younger eyewitness testifies compared to the middle-age condition, whereas participants who believe younger eyewitnesses are more reliable will render more positive judgments when a younger eyewitness testifies compared to the middle-age condition. (4) An interaction between weapon presence and participant belief in the weapon focus effect. Specifically, participants who believe weapon presence interferes with memories of the event unrelated to the weapon (i.e., those who believe in the weapon focus effect) will render more negative judgments when a weapon is present compared to when it is not. Participants who do not believe in the weapon focus effect will render more positive judgments when a weapon is present compared to when it is not.

Method

Participants. Two hundred jury-eligible undergraduate students (60.5% female) at the University of Nebraska-Lincoln participated. Participants were representative of the university's population (mean age = 19.84, 88% White). Recruitment took place through the psychology department's internet-based subject pool. Participants received course credit for participation.

Materials and Procedure. Each participant, through random assignment, received one of eight versions of a criminal trial summary. A 2 x 4 between-groups factorial design was utilized to examine effects of eyewitness age (6, 11, 42, or 74 years) and weapon presence (weapon visible or not) on mock jurors' decisions. The trial summary described a convenience store robbery in which an eyewitness observed a culprit either with or without a gun. The eyewitness was the only person with a clear view of the robbery, and he claimed to remember what the perpetrator looked like and was able to pick the alleged robber out of a lineup. The eyewitness testified that the defendant was the person who robbed the store.

Participants were first asked to fill out a questionnaire concerning beliefs and attitudes about the legal system, which included questions about participants' beliefs about the effects of eyewitness age and weapon presence on eyewitness reliability (Deffenbacher & Loftus, 1982). These questions were rated on a 1 (*strongly disagree*) to 5 (*strongly agree*) point scale. Participants with higher values on the child eyewitness reliability item (e.g., "A child eyewitness is more reliable than an adult eyewitness") endorsed a stronger belief in the reliability of child eyewitnesses compared to those with lower values (i.e., low values were more consistent with the empirical literature). Participants with higher values on the weapon focus effect question endorsed a stronger belief in the effect ("When a person sees a weapon while witnessing a crime, s/he will have a reduced ability to remember the details of the event"; i.e., high values were more consistent with the empirical literature).

After reading the transcript, participants completed additional questionnaires. They provided demographic information, a verdict, and rated the credibility of the witnesses (1, *low* to 5, *high*).[1] In addition to the dichotomous verdict decision, participants also rated the perceived culpability of the defendant (0-100%).

Results

Please refer to Table 1 for descriptive statistics. We examined whether participant age, gender, or race moderated any of our effects. They did not, so we did not include them in our models. To examine our hypotheses about verdict decision, we performed a binary logistic regression. Predictors included eyewitness age (categorical), weapon presence (categorical), participant belief about the effect of eyewitness age and weapon presence on accuracy (each

[1] Although mock jurors rated the credibility of several witnesses included in the transcript, we only report the eyewitness credibility ratings in this paper because our focus here is on perceptions of the eyewitness. Results on credibility of the other witnesses are available from the first author.

continuous), and the interactions between eyewitness age x belief about age and weapon presence x belief about weapon presence.

Verdict decision was significantly related to eyewitness age (Odds Ratio = 0.02, 95% CI = 0.00 – 0.72, p = 0.03). Specifically, the 42-year–old eyewitness elicited fewer not guilty (15%) verdicts compared to child (22% and 23%) and elderly (29%) eyewitnesses. The interaction between eyewitness age and participant belief about the effect of eyewitness age emerged in the predicted direction (Odds Ratio = 2.66, 95% CI = 0.99 – 7.13, p = 0.05). When the eyewitness was 6 years old, mock jurors who convicted the defendant believed child eyewitnesses were more reliable (M= 3.32, SD=0.84) than those who found the defendant not guilty (M=4.10, SD=0.87), t(51)=3.17, p=0.003. For eyewitnesses of all other ages, the beliefs of mock jurors who convicted and acquitted did not differ significantly, ts < 0.9.

[Insert Table 1 about here]

To examine the remaining hypotheses, we conducted a between-groups multivariate analysis of covariance (*MANCOVA*). We included two categorical independent variables (age of eyewitness and weapon presence), two continuous independent variables entered as covariates (strength of participant belief in child eyewitnesses reliability and the weapon focus effect), and the interactions between eyewitness age x age belief and weapon presence x weapon focus effect belief. The dependent variables were eyewitness credibility and defendant culpability.

The results of the overall omnibus tests were significant for four of the independent variables. We found significant omnibus main effects for eyewitness age, Wilks' Lambda = 0.79, F(6, 382) = 7.83, p < 0.001, eta_p^2 = 0.11; strength of participant belief in child eyewitness reliability, Wilks' Lambda = 0.96, F(2, 191) = 3.75, p = 0.025, eta_p^2 = 0.04; strength of participant belief in the weapon focus effect, Wilks' Lambda = 0.97, F(2, 191) = 3.32, p = 0.038,

eta_p^2 =0.03; and the interaction between weapon presence and the strength of participants' beliefs about the weapon focus effect, Wilks' Lambda = 0.96, $F(2, 191) = 3.58$, $p = 0.03$, $eta_p^2 = 0.04$. Nonsignificant effects included the predicted main effect of weapon presence and the predicted interaction between eyewitness age and strength of participant belief in child eyewitness accuracy, Wilks' Lambdas < 0.96, *Fs* < 4.32, *ps* > 0.05, $eta_p^2 < 0.04$.

We further explored these findings by using separate univariate ANCOVAs with follow-up LSD post-hoc analyses when appropriate. We observed significant univariate effects of age of eyewitness on defendant culpability ratings, F (3, 192) = 5.14, $p = .002$, $eta_p^2 = .07$. Consistent with our hypothesis, the 42- year-old eyewitness ($M = 70.98$, $SD = 22.69$) elicited significantly higher defendant culpability ratings than the 6-year-old ($M = 56.83$, $SD = 28.99$) and 74-year-old eyewitness ($M = 54.24$, $SD = 25.31$), $p = 0.003$ and <0.001, respectively. We also found significant differences between the eyewitness age groups on credibility ratings, F (3, 192) = 14.00, $p < 0.001$, $eta_p^2 = 0.18$. The 42-year-old eyewitness elicited significantly higher ratings ($M = 3.94$, $SD = 0.94$) than any of the other three groups, p <0.002.

Although we did not formulate any *a priori* hypotheses regarding main effects of participant beliefs, we found significant univariate effects for the strength of belief that child eyewitnesses are more accurate than adults on both defendant culpability ratings ($\beta = 5.22$, $t = 2.73$, p =0.007, eta_p^2= 0.04) and eyewitness credibility ratings ($\beta = 0.15$, $t = 2.12$, p =0.036, eta_p^2= .02). The positive relation between defendant culpability ratings and child eyewitness accuracy belief indicates that for each unit increase participants endorsed on the 5-point child eyewitness accuracy belief item, culpability ratings for the defendant increased by 5.22%. The relation between child eyewitness accuracy belief and eyewitness credibility ratings indicates that for each unit increase participants endorsed on the 5-point child eyewitness accuracy item,

eyewitness credibility ratings increased by 0.15 units on the 1 to 5 scale. No significant main effect was found for strength of weapon focus belief on either defendant culpability ratings or eyewitness credibility ratings ($\beta s < 4.18$, $ts < 1.87$, $ps > 0.06$).

We hypothesized an interaction between participants' beliefs and the manipulated conditions (age and weapon presence) consistent with their beliefs. As explained above, no relations between eyewitness age and strength of participant belief in child eyewitness reliability were found. Likewise, the predicted interaction between weapon presence and strength of participant belief in the weapon focus effect did not emerge for defendant culpability ratings, $\beta = 0.88$, $t = 0.27$, $p = 0.79$, $eta_p^2 < 0.001$. However, the predicted interaction between weapon presence and strength of participant belief in the weapon focus effect did emerge for eyewitness credibility, $\beta = 0.26$, $t = 2.10$, $p = 0.037$, $eta_p^2 = 0.02$. A stronger belief in the weapon focus effect was associated with higher eyewitness credibility ratings when the weapon was absent, but with lower credibility ratings when the weapon was present (see Figure 1).

[Insert Figure 1 about here]

We conducted exploratory analyses to see whether juror beliefs mediated the relation between the independent variables (eyewitness age, weapon presence) and the continuous dependent variables (eyewitness credibility, defendant culpability). Baron and Kenny's (1986) method and Sobel (1982) tests were used to explore these relationships, which produced identical findings (we present only the Baron and Kenny analysis here). Although we explored four potential meditational models, only one emerged as significant. We found support for juror beliefs about the effect of eyewitness age as a mediator between eyewitness age and credibility.

As per Baron and Kenny's (1986) method, regression analyses found that eyewitness age (the IV) accounted for a significant portion of variance in juror belief (the mediator), $\beta = 0.22$,

$t(199)= 3.18$, $p= 0.002$, and eyewitness age (IV) significantly predicted eyewitness credibility (DV), $\beta= 0.17$, $t(199)= 2.41$, $p= 0.017$. In a separate model testing the relations between both the IV and the mediator on the DV, the mediator (juror belief) remained significant, $\beta= 0.27$, $t(199)= 3.89$, $p< 0.001$, whereas the effect of the IV (eyewitness age) was no longer significant, $\beta= 0.11$, $t(44)= 1.57$, $p= 0.12$, indicating that full mediation was demonstrated.

Discussion

This study examined the relation between mock jurors' judgments and beliefs regarding eyewitness age and weapon presence. Consistent with our hypotheses, mock jurors were generally sensitive to these factors, and beliefs were related to trial judgments. A main effect of eyewitness age emerged on verdict, defendant culpability, and eyewitness credibility ratings, such that the adult eyewitness elicited significantly fewer not guilty verdicts and elicited higher culpability and credibility ratings compared to child and elderly eyewitnesses. These findings are encouraging, as they are consistent with empirical findings that adults are better eyewitnesses than both children (Pozzulo & Lindsay, 1998; Poole & White, 1991; Roebers & Schneider, 2001) and elderly adults (Bartlett & Memon, 2007; Mueller-Johnson, 2005).

Although verdict decisions showed the predicted interaction between eyewitness age and participant belief, ratings of culpability and credibility did not. This may indicate jurors were indeed affected by the independent variables (as evidenced by the differential verdict decisions), but that the effect did not significantly influence lower order judgments – the culpability and credibility ratings. Other research has found a similar pattern of results: although successful manipulations may affect verdict or credibility ratings, one does not always translate into the other as a function of the manipulation (e.g., Abshire & Bornstein, 2003; Lindsay, 1994).

Unexpectedly, a significant main effect was found for strength of participant belief in child eyewitness reliability on both defendant culpability and eyewitness credibility ratings. Both increased as participant endorsement of child eyewitness reliability increased. This finding suggests mock jurors naive to the limitations of child eyewitness reliability are also likely to believe witnesses are more credible and defendants are more culpable in general. Less knowledgeable jurors may hold erroneous beliefs that influence broad trial perceptions. Surveys assessing beliefs about eyewitness age and reliability suggest jurors are less knowledgeable than experts (Kassin et al., 2001; Benton et al., 2006). It appears in this study that the effects of erroneous juror beliefs about eyewitness age and reliability predict trial perceptions.

We hypothesized a main effect of weapon presence; however, it did not emerge in any of the analyses. This is surprising because the presence of a weapon is known to affect memory for details of the event unrelated to the weapon (Pickel, 2007; Shaw & Skolnick, 1994; Steblay, 1992). The findings are consistent with surveys indicating mock jurors are significantly less knowledgeable about the weapon focus effect than experts (Benton et al., 2006; Kassin et al., 2001; Read & Desmarais, 2009). One possible reason no main effect emerged for weapon presence is because the manipulation may not have been effective. A limitation of this study is that we did not include a manipulation check for either the eyewitness age or weapon presence variable; therefore, it is possible participants did not discern a difference between conditions.

The predicted interactions involving weapon focus were partially supported. Findings suggest mock jurors who hold correct beliefs perceive the credibility of witnesses consistent with the literature (e.g., Pickel, 2007). However, the non-significant interaction for defendant culpability ratings or verdict indicates the effect of correct beliefs may be limited only to judgments of the eyewitness' credibility. This may be because the weapon focus effect would

have the most immediate impact on the eyewitness' memory for the details of the event unrelated to the weapon, whereas judgments of defendant culpability and verdict are more distally related.

Study 2: Length of Eyewitness Identification Time

We conducted Study 2 to examine whether, and in what ways, mock juror beliefs about lineup identification speed affect their decisions. Based on the literature, we hypothesized mock jurors would be somewhat sensitive to this factor, and that their beliefs would be related to their trial judgments. Specifically, we predicted: (1) A main effect of length of identification time, such that slower identifications will result in more not guilty verdicts than faster identifications. Slower identifications will also result in lower eyewitness credibility and defendant culpability ratings. (2) An interaction between length of identification time and participant belief about decision time. Specifically, participants who believe faster identifications are more likely to be accurate will render more positive judgments in the fast condition compared to the slow condition and vice-versa.

Method

Participants. Two hundred jury-eligible undergraduate students (67% female) at the University of Nebraska-Lincoln participated. Participants were representative of the university's population (mean age = 20.45 years, largely White). Recruitment took place through the psychology department's internet-based subject pool, and participants received course credit.

Design. Participants were randomly assigned to either a relatively long or short eyewitness identification time condition. The strength of participants' beliefs in the accuracy of identification time was measured by their response to an item in a pre-trial questionnaire ("The more quickly an eyewitness identifies a person as the perpetrator in a lineup, the more accurate the identification is likely to be [compared to an identification that takes a longer time]"; Kassin

et al., 2001). Participants rated their response on a Likert-Type scale, from 1, "*strongly agree*" to 5, "*strongly disagree*." The dependent variables were the verdict rendered (guilty/ not guilty), defendant culpability ratings, (0-100%), and witness credibility ratings (1, *low* to 5, *high*).

Materials. Participants were given a 17-page transcript of a robbery-murder case, with similar case facts to the trial used in Study 1, except for a few minor differences (e.g., the eyewitness in Study 2 was female). The eyewitness' testimony consisted of her report of observing a robbery-murder in a convenience store in which she worked. She was looking out of a window from an office about 20 feet away from the perpetrator. When asked how long it took her to identify the defendant (from a simultaneous lineup), she responded, "I made my decision as soon as I saw him" in the fast condition, whereas in the slow condition she said, "I had to think about it for a while before I could be sure of my choice."

The police officer witness gave a general description of the lineup procedure. Upon cross-examination, he testified about the length of time it took the eyewitness to identify the defendant. In the fast condition he said, "It was quite fast, two or three seconds, maybe." In the slow condition he said, "[she] debated for about thirty seconds." These measures were based on Sporer's (1993) findings that the average "correct" decision time was 3.47 seconds and the average "incorrect" decision time was 13.33 seconds.

Procedure. Participants read a consent form and were instructed to pretend they had been selected as a juror in the case. They filled out a 20-item Juror Attitude Survey, which included the belief about identification speed item. They were then asked to read the transcript and give their verdict, rate the defendant's culpability and each witness' credibility,[2] and answer

[2] Although mock jurors rated the credibility of several witnesses, we only report the eyewitness credibility ratings here because our focus is on perceptions of the eyewitness. Results on credibility of the other witnesses are available from the first author.

a manipulation check question concerning identification speed. The procedure took 30 to 40 minutes and was completed individually.

Results

Please refer to Table 2 for descriptive statistics. The manipulation check revealed the eyewitness identification speed manipulation was perceived as intended. Ninety-seven percent correctly reported their perception of the fast condition as relatively fast, and sixty-one percent in the slow condition reported their perception as relatively slow, $X^2(1, 199) = 78.96$, $p < 0.001$, $\theta = 0.04$. Participants who failed the manipulation check were excluded from further analyses.

To examine our hypotheses about verdict decision, a binary logistic regression with verdict as the DV and eyewitness identification speed (categorical), strength of participant belief about the effect of identification speed (continuous), and the interaction between the two variables as predictors was computed. Consistent with our hypothesis, the defendant was less likely to be found guilty when the identification was slow (6%) compared to when it was fast (47%) (Odds Ratio = 55.80, 95% CI = 3.32 – 937.17, $p = 0.005$). The predicted interaction between length of identification time and participant belief about the effect of length of identification time did not emerge (Odds Ratio = 0.55, 95% CI = 0.24 – 1.24, $p = 0.15$).

[Insert Table 2 about here]

To examine the remaining hypotheses, we conducted a between-groups multivariate analysis of covariance (*MANCOVA*). We included one categorical IV (identification time), one continuous IV entered as a covariate (strength of juror belief that faster identifications are more accurate), and the interaction. Our two continuous DVs were defendant culpability and eyewitness credibility. A significant omnibus main effect was found for identification speed, Wilks' Lambda = 0.96, $F(2, 152) = 3.61$, $p = 0.029$, $eta_p^2 = 0.05$. The predicted interaction

between identification speed and speed belief did not emerge, and no main effect was found for speed belief, Wilks' Lambdas < 1.0, *Fs* (2, 152) < 1.75, *ps* > 0.17.

Significant univariate effects of identification speed emerged on defendant culpability [*F* (1, 153) = 5.68, *p* = 0.018, eta_p^2 = 0.04] and eyewitness credibility [*F* (1, 153) = 5.45, *p* = 0.021, eta_p^2 = 0.03] ratings. Consistent with our hypotheses, slower identifications were associated with lower culpability ratings (*M* = 51.65, *SD* = 27.15) than faster identifications (*M* = 68.88, *SD* = 28.51), and slower identifications elicited lower credibility ratings (*M* = 3.32, *SD* = 0.98) than faster identifications (*M* = 3.62, *SD* = 0.93).

As in Study 1, we conducted exploratory analyses to discern whether juror beliefs might mediate the relation between the independent variable (identification decision speed) and the continuous dependent variables (eyewitness credibility, defendant culpability). Baron and Kenny's (1986) method and Sobel (1982) tests were used to explore these potential meditational relationships. Although we explored both potential meditational models, neither emerged as significant; therefore, it does not appear juror beliefs mediate this relation.

Discussion

This study examined the effect of eyewitness identification time on mock juror decisions, including the degree to which intuition about identification time plays a role. Our hypothesis that identification time would emerge as a main effect for each of the dependent variables was supported. This is an encouraging finding, as it is consistent with research findings that faster identifications are more likely to be accurate (e.g., Sauerland & Sporer, 2009).

The null findings for the main effect of participant belief and the interaction between identification time and participant belief may be due to a weak relation between the variables, or it may be because participants underestimate the effects of identification time, as Kassin and

Barndollar (1992) found with other eyewitness factors. Alternatively, this can be interpreted as encouraging, because although some jurors indicated a belief that slower identifications are more likely to be accurate, the effect of these erroneous beliefs on judgments was minimal.

The results of the manipulation check showed the identification speed manipulation was perceived as intended. Although this was a "successful" manipulation statistically, participants in the slow condition made more errors in the manipulation check (39%) than those in the fast condition (3%). Thus, the slow condition manipulation may not have been strong enough to elicit some expected results. Future studies should attempt a more recognizably slow condition to examine the effect on jurors' decisions (e.g., the slow condition could take 3 minutes rather than 30 seconds).

General Discussion

How well do jurors' beliefs predict trial judgments? Previous research indicates the beliefs with which jurors arrive in court can influence their trial perceptions and decisions (e.g., Bornstein et al., 2008). This reality is problematic for the legal system when juror beliefs are erroneous. We conducted the current studies to examine the effects of juror beliefs regarding problematic situations identified in previous research (e.g., child and elderly eyewitness, weapon focus, and a slow identification).

The main effects of eyewitness age and identification time parallels empirical knowledge regarding how eyewitness age and identification time actually predict eyewitness reliability. Unexpectedly, no main effects of weapon presence emerged, which is not in line with empirical findings that the presence of a weapon negatively affects eyewitness memory for details of the crime and perpetrator identification (Pickel, 2007; Shaw & Skolnick, 1994; Steblay, 1992). However, an interaction between weapon effect belief and weapon presence emerged.

The interactions between the manipulated variables and participant belief about them were the heart of this study. We hypothesized an interaction between the independent variable and the relevant participant belief for each dependent variable. The hypothesis was partially supported, but only for eyewitness age and weapon presence, and only for some judgments – verdict for eyewitness age, and eyewitness credibility for weapon focus. Although it is not clear why these conceptually related dependent variables would have different outcomes, a similar pattern has been obtained by other researchers (e.g., Abshire & Bornstein, 2003; Lindsay, 1994). No interactions were found for identification speed and participant belief. The directions of the significant interactions are in line with what would be expected based on participant belief. These results are both encouraging and discouraging. Juror beliefs do predict at least some perceptions and judgments at trial. This is encouraging when juror beliefs are in line with empirical findings, but discouraging when juror beliefs are erroneous.

The exploratory mediational analyses in each study found only one relation: juror beliefs about eyewitness age significantly mediated the relation between eyewitness age and credibility. It makes theoretical sense that the relation between eyewitness age and credibility would be mediated through juror beliefs about the effects of eyewitness age, because these variables are all directly related. Although it was somewhat surprising that the same pattern was not found when defendant culpability served as the DV, this may be due to the fact that eyewitness credibility is more directly related to the IV and DV in this case than is defendant culpability. Likewise, the relations between weapon presence, beliefs about weapon presence, and eyewitness credibility and defendant culpability were not significant mediational relations; nor were relations between identification speed, belief about identification speed, and eyewitness credibility and defendant culpability ratings. This may be because these DVs are not as directly relevant to the IV and

mediator as the eyewitness credibility ratings were for eyewitness age and beliefs about eyewitness age.

The results of this investigation highlight a potential need for juror education concerning factors that can influence eyewitness reliability and accuracy. In cases where legitimate concerns exist regarding the reliability of eyewitness memory (e.g., the eyewitness is a child, a weapon was present during the event, the eyewitness took a long time to identify, etc.), attorneys may be wise to include *voir dire* questions to expose juror beliefs when such beliefs might bear on the case outcome. Although *voir dire* in general is not a particularly effective safeguard (van Wallendael, Cutler, Devenport, & Penrod, 2007), jurors with problematic expectations about relevant eyewitness issues could be removed through peremptory challenges. Further, during trials in which one of these eyewitness situations arises, attorneys can call expert witnesses to testify about the limitations of memory, which can potentially sensitize jurors to factors that predict better/worse eyewitness performance (van Wallendael et al., 2007; Cutler et al., 1990). If erroneous juror beliefs can be corrected during trial, their impact may be reduced.

Limitations and Future Directions

The primary limitation of the current studies concerns the utilization of written trial simulations and undergraduate student participants. Simulation studies, particularly those relying on undergraduate students, are sometimes criticized for lacking in real-world consequentiality (Bornstein & McCabe, 2005; Vidmar, 2008). Such criticisms are especially a concern when courts and policy makers evaluate research findings (Monahan & Walker, 2005). However, reviews of mock jury research have demonstrated few systematic differences as a function of simulation verisimilitude (see, e.g., Bornstein, 1999; Bornstein & McCabe, 2005).

Other limitations include the fact that we did not include deliberation as part of the juror decision-making process, and the absence of a manipulation check in Study 1. The lack of a manipulation check limits the interpretations we can make about our findings. The fact that we used single items to measure juror attitudes for each of the three belief variables restricts our ability to calculate reliability coefficients. Although the measures were face valid, it is possible that our single items did not exactly tap into what we intended. A possible direction for future research is to develop a questionnaire to measure jurors' attitudes about these factors. General attitudes toward eyewitnesses are not strong predictors of jurors' decisions (Narby & Cutler, 1994), but it is possible that a measure focusing on more specific beliefs (i.e., about which factors do and do not influence eyewitness reliability) would have more predictive utility (van Wallendael et al., 2007). A psychometrically sound attitude questionnaire could then be used in future studies, as well in trial consultation, to examine how various judgments might be related.

Future research should examine other ways in which jurors' beliefs predict their trial judgments. Further, the impact of interventions to reduce the effect of erroneous juror beliefs is needed. Will *voir dire* deselection reduce the number of misinformed jurors and lead to less misinformed juries overall? Can juries be educated during trial by the testimony of expert witnesses in such a way that erroneous beliefs can be modified before decisions are affected by them? The present studies show that laypeople's beliefs about what (and how) select factors influence eyewitness reliability vary, and that those beliefs predict their judgments at trial. Attorneys and the courts therefore need to take jurors' beliefs into account.

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Table 1
Study 1 Descriptive Statistics

Prior Witness Age Belief	Measure			
	Defendant Culpability (%)		Eyewitness Credibility*	
Adults more Reliable	*M*	*SD*	*M*	*SD*
6 yr-old eyewitness	50.83	28.58	2.57	0.92
11 yr-old eyewitness	59.70	23.90	3.32	0.80
42 yr-old eyewitness	68.44	23.47	3.89	0.95
74 yr-old eyewitness	53.10	26.20	2.97	1.02
Children more Reliable				
6 yr-old eyewitness	81.00	31.31	3.80	1.30
11 yr-old eyewitness	71.22	28.94	3.56	0.73
42 yr-old eyewitness	71.25	16.52	3.75	0.50
74 yr-old eyewitness	48.38	25.29	2.63	0.52

Note: The belief dichotomies represented here were created by recoding the belief variable. Participants indicating agreement (answering 4 or 5) were categorized as "child believers" (n = 26), participants who answered 1 or 2 were categorized as "non-believers" (n = 125), neutral participants are not included (n = 49). *Credibility variables were measured on a scale of one to five, with one as least credible and five as most credible. N=151.

Prior Witness Focus Effect Belief	Measure			
	Defendant Culpability (%)		Eyewitness Credibility*	
Believes in Weapon Effect	*M*	*SD*	*M*	*SD*
Weapon Present	58.50	26.93	3.11	1.08
Weapon Absent	56.73	29.42	3.41	1.08
Does not Believe in Weapon Effect				
Weapon Present	66.10	21.48	3.50	0.98
Weapon Absent	65.79	24.89	3.21	1.02

Note: The belief dichotomies represented here were created by recoding the belief variable. Participants indicating agreement (answering 4 or 5) were categorized as "believers" (n = 95), participants who answered 1 or 2 were categorized as "non-believers" (n = 57), and neutral participants are not included here (n = 48). *Credibility variables were measured on a scale of one to five, with one as least credible and five as most credible. N=152.

Figure 1. Weapon presence and weapon focus belief interaction on eyewitness credibility.

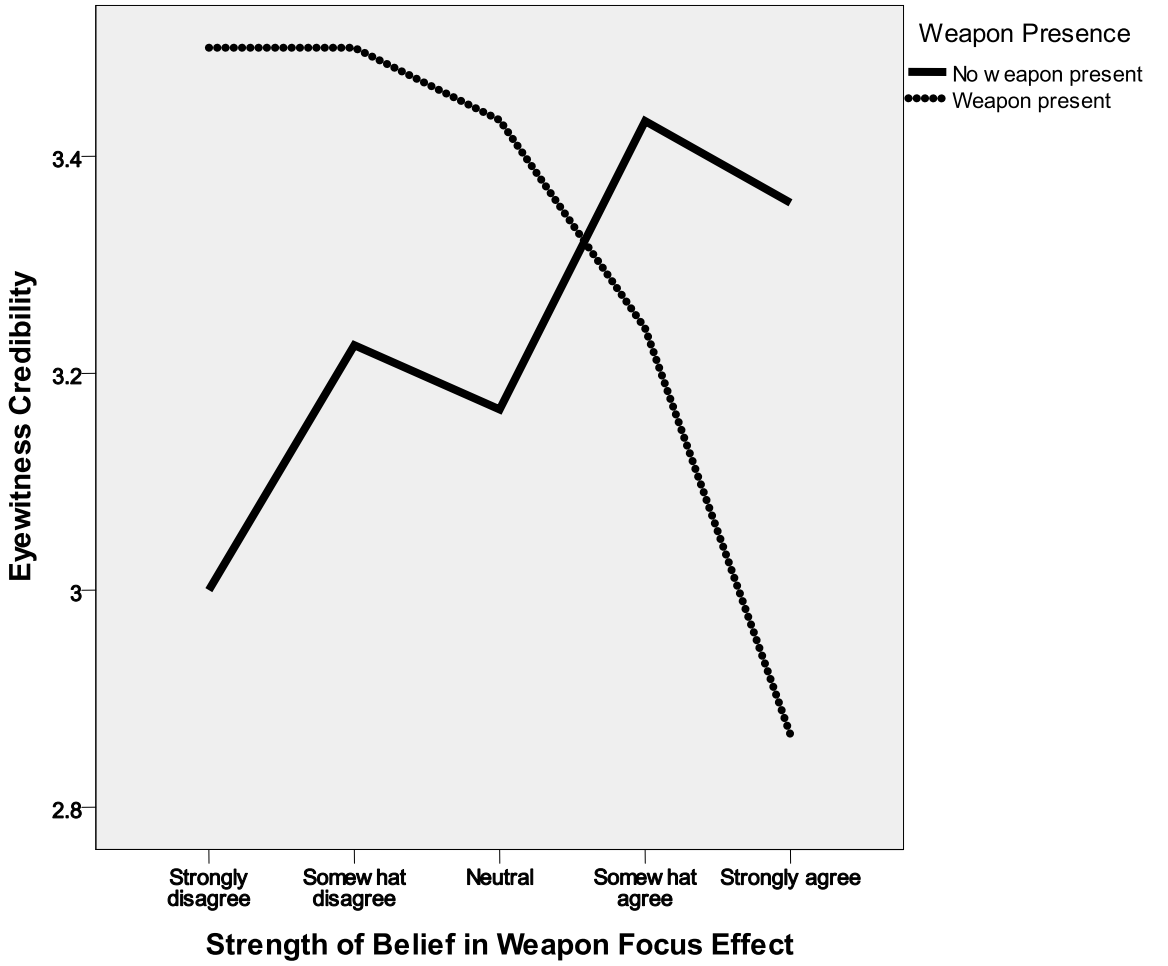

Table 2
Study 2 Descriptive Statistics

Prior Identification Speed Belief	Measure			
	Defendant Culpability (%)		Eyewitness Credibility*	
Believe Speed Helps Accuracy	*M*	*SD*	*M*	*SD*
Fast Eyewitness Decision	60.66	30.77	3.41	1.02
Slow Eyewitness Decision	52.56	30.87	3.44	1.09
Believes Speed Hinders Accuracy				
Fast Eyewitness Decision	76.22	26.12	3.83	0.81
Slow Eyewitness Decision	54.38	25.34	3.08	0.97

Note: The belief dichotomies represented here were created by recoding the belief variable. Participants indicating agreement (answering 1 or 2) were categorized as "speed believers" (n = 91), participants who answered 4 or 5 were categorized as "slow believers" (n = 76), neutral participants are not included (n = 33). * Credibility variables were measured on a scale of one to five, with one as least credible and five as most credible. N=131.