

2005

Jury knowledge of eyewitness memory: can jurors use this knowledge in the courtroom?

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JURY KNOWLEDGE OF EYEWITNESS MEMORY:
CAN JURORS USE THIS KNOWLEDGE IN THE COURTROOM?

A Thesis
Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Master of Arts

In

The Department of Psychology

by
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B.S., Louisiana State University, 2002
December 2005

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Abstract

As a result of *Daubert*, trial judges were advised to only admit an expert once they determine 1) that the testimony is supported with scientific evidence and 2) would assist the trier(s) of fact. The present studies were designed to address the second criterion of admissibility by 1) assessing jurors' knowledge of eyewitness memory, and 2) determining if they can apply this knowledge when assessing mock courtroom testimony. In the first study, subjects evaluated trial transcripts of testimony concerning an eyewitness account where factors that influence eyewitness memory were present in either a negative form or a positive form. In the second study subjects evaluated testimony in transcripts that described factors in a negative, positive, or omitted form. Subjects in both experiments also answered survey questions (adapted from Kassin et al., 2001) to assess their personal beliefs regarding eyewitness memory issues. Results suggest jurors appear to be sensitive to many factors that influence eyewitness memory in both the survey format and the trial transcripts. In particular, performance on the trial transcripts suggests that potential jurors may be more sensitive to a number of eyewitness memory issues than would be implied by the results of prior survey research. The implications of these findings are discussed.

Introduction

Eyewitness testimony is often the most incriminating evidence against a defendant in court and has been responsible for more wrongful convictions than any other type of evidence (Lindsay, 1999). In fact, of the first 40 cases of wrongful convictions overturned due to DNA evidence, 90% involved eyewitnesses who falsely identified the defendant (Wells, Small, Penrod, Malpass, Fulero, & Brimacombe, 1998). One potential safeguard against wrongful convictions due to mistaken identifications is the use of expert testimony to educate jurors about the limitations of eyewitness memory.

The admissibility of scientific evidence, including expert testimony, was originally addressed in the 1923 case, *Frye v. United States*. The recommended criteria for admissibility included the notion that there be general acceptance among experts in the field that the evidence is valid. More recently in *Daubert v. Merrell Dow Pharmaceuticals, Inc.* (1993), the United States Supreme Court recommended that trial judges should determine admissibility of expert testimony based on two criteria. First, judges must determine if the scientific evidence is supported with valid research and second, if the evidence would assist the trier(s) of fact. However, because judges may not be familiar with scientific evidence in all fields, they may still admit expert testimony if there is general acceptance among experts in that particular field that the research is valid.

In order to assess general acceptance among eyewitness memory experts, Kassin, Ellsworth, & Smith (1989) and more recently, Kassin, Tubb, Hosch, & Memon (2001) surveyed experts for their views on statements concerning the accuracy of eyewitness memory. The experts were asked to characterize the reliability of the scientific evidence supporting each statement. Topics and statements used in these studies are presented in Table 1.

Table 1

Topics and statements used in Kassin, Ellsworth, & Smith (1989) and Kassin, Tubb, Hosch, & Memon (2001).

| Topics | Statements |
|---|--|
| Stress ^a | Very high levels of stress impair the accuracy of eyewitness testimony. |
| Weapon focus ^a | The presence of a weapon impairs an eyewitness's ability to accurately identify the perpetrator's face. |
| Showups ^a | The use of a one-person showup instead of a multiple person lineup increases the risk of misidentification. |
| Lineup fairness ^a | The more members of a lineup resemble the suspect, the higher the likelihood that identification of the suspect is accurate. |
| Lineup instructions ^a | Police instructions can affect an eyewitness's willingness to make an identification. |
| Exposure time ^a | The less time an eyewitness has to observe an event, the less he or she will remember. |
| Forgetting curve ^a | The rate of memory loss for an event is greatest right after the event and then levels off over time. |
| Accuracy-confidence ^a | An eyewitness's confidence is not a good predictor of his or her identification accuracy. |
| Postevent information ^a | Eyewitness testimony about an event often reflects not only what they actually saw but information they obtained later. |
| Color perception ^a | Judgments of color made under monochromatic light (e.g., an orange streetlight) are highly unreliable. |
| Wording of the questions ^a | An eyewitness's testimony about an event can be affected by how the questions put to that witness are worded. |
| Unconscious transference ^a | Eyewitnesses sometimes identify as a culprit someone they have seen in another situation or context. |
| Trained observers ^a | Police officers and other trained observers are more accurate as eyewitnesses than is the average person. |
| Hypnotic accuracy ^b | Hypnosis increases the accuracy of an eyewitness' reported memory. |
| Hypnotic retrieval ^c | Hypnosis does not facilitate the retrieval of an eyewitness' memory. |
| Hypnotic suggestibility ^a | Hypnosis increases suggestibility to leading and misleading questions. |
| Attitudes and expectations ^a | An eyewitness's perception and memory for an event can be affected by his or her attitudes and expectations. |

Table 1 Continued

| Topics | Statements |
|---|--|
| Event violence ^a | Eyewitnesses have more difficulty remembering violent than nonviolent events. |
| Cross-race bias ^a | Eyewitnesses are more accurate when identifying members of their own race than members of other races. |
| Confidence malleability ^b | An eyewitness's confidence can be influenced by factors that are unrelated to identification accuracy. |
| Alcoholic intoxication ^b | Alcoholic intoxication impairs an eyewitness's later ability to recall persons and events. |
| Mugshot induced bias ^b | Prior exposure to mug shots of a suspect increases the likelihood that the witness will later choose that suspect in a lineup. |
| Long term repression ^b | Traumatic experiences can be repressed for many years and then recovered. |
| False childhood memories ^b | Memories people recover from their own childhood are often false or distorted in some way. |
| Discriminability ^b | It is possible to reliably differentiate between true and false memories. |
| Child witness accuracy ^b | Young children are less accurate as witnesses than are adults. |
| Child suggestibility ^b | Young children are more vulnerable than adults to interviewer suggestion, peer pressures, and other social influences. |
| Description matched lineup ^b | The more that members of a lineup resemble a witness's description of the culprit, the more accurate an identification of the suspect is likely to be. |
| Presentation format ^b | Witnesses are more likely to misidentify someone when presented with all lineup members at the same time (simultaneous lineup) as opposed to seeing one lineup member at a time (sequential lineup). |
| Elderly witnesses ^b | Elderly eyewitnesses are less accurate than younger adults. |
| Identification speed ^b | The more quickly a witness makes an identification upon seeing the lineup, the more accurate he or she is likely to be. |
| Time estimation ^c | Eyewitnesses tend to overestimate the duration of events. |
| Sex differences ^c | Women are better than men at recognizing faces. |

^a Topics used in both studies.

^b Topics added in Kassin et al (2001)

^c Topics used only in Kassin et al (1989)

Kassin et al (2001) found that 80% or more of experts agreed that scientific evidence supporting the following factors that influence eyewitness memory have enough scientific evidence supporting them to merit expert testimony in the courtroom: *the wording of the questions, lineup instructions, postevent information, confidence malleability, mugshot induced bias, child witness suggestibility, attitudes and expectations, hypnotic suggestibility, alcoholic intoxication, the cross race bias, weapon focus, the accuracy-confidence correlation, the forgetting curve, exposure time, presentation format, and unconscious transference*. Thus, there is substantial agreement among eyewitness memory experts about the scientific basis for a number of important issues.

Despite this consensus, many eyewitness memory experts have not been allowed to testify in trials where their expertise might be relevant. One commonly cited reason for inadmissibility pertains to judges' assumption that the issues to be discussed would be common sense to most jurors (Kassin, Tubb, Hosch, and Memon, 2001). To address this assumption, researchers have attempted to assess lay knowledge of eyewitness memory limitations. The general finding from these studies is that lay people appear to hold some beliefs about eyewitness memory that are inconsistent with scientific evidence. However, the exact issues sometimes vary from study to study.

The most common method used to assess lay knowledge of eyewitness identification issues is the survey. Specifically, respondents are asked whether they agree or disagree with various statements describing factors that may impact eyewitness memory. Survey studies generally conclude that the average person does not possess knowledge of many factors that influence eyewitness memory and therefore would benefit from expert testimony. However, a

closer examination of the results of survey studies reveals that participants appear to have knowledge for a number of these eyewitness identification issues.

The first questionnaire used to survey lay knowledge was the Knowledge of Eyewitness Behavior Questionnaire (KEBQ) developed by Deffenbacher and Loftus (1982). This questionnaire contains 14 multiple-choice questions pertaining to eyewitness identification issues. Each question was followed by four alternative choices with one being the correct answer. Two of the issues (mug shot induced bias and cross race bias) were covered by two questions each, therefore this survey examined the following 12 eyewitness identification issues: the cross race bias, mug shot induced bias, event violence, face memory, trained observers, interrogation, stress, weapon focus, question wording, age, accuracy-confidence correlation, and time estimation. Explanations of these issues are presented in Table 2.

Deffenbacher and Loftus (1982) administered the KEBQ to a sample composed of undergraduate students and people from the community. The authors found no significant differences between groups so the data for the two groups were combined. Using the criterion of at least 50% of the sample choosing the correct answer, they found that 56% to 86% of subjects accurately answered the questions concerning the cross race bias, stress, question wording, mug shot induced bias, and time estimation. However, only 16% to 48% of subjects accurately answered the questions concerning event violence, face memory, the accuracy-confidence correlation, weapon focus, trained observers, interrogation, age, and one of the cross race bias questions. These results indicate that potential jurors possess knowledge of 4 of these 12 eyewitness identification issues.

None and Hollin (1987) replicated a similar pattern of results using the KEBQ with a British sample composed of undergraduate students, law students, and older adults from the

community. The authors also found no significant differences between groups so the data for the three groups were combined. They found that 53% to 86% of subjects accurately answered the questions concerning the cross race bias, stress, weapon focus, question wording, mug shot induced bias, age, and time estimation. However, only 12% to 30% of subjects accurately answered the questions concerning event violence, face memory, the accuracy-confidence correlation, trained observers, interrogation, and one of the cross race bias questions. These results indicate that potential jurors possess knowledge of 6 of these 12 eyewitness identification issues.

Seltzer, Lopes, and Venuti (1990) adapted the KEBQ by only examining 5 of the 12 eyewitness identification issues from the KEBQ. The authors surveyed jurors who had just completed jury duty and found 55% of participants accurately answered the question concerning stress but only 13 % to 42% of participants correctly answered the questions concerning the cross race bias, event violence, trained observers, and the accuracy-confidence correlation. These findings suggest that jurors are not familiar with four of the five eyewitness identification issues covered in this study. The results from this study are consistent with previous studies that used the KEBQ.

Overall the studies using the KEBQ listed above covered a number of eyewitness identification issues and highlight six issues that appear to be appropriate for expert testimony. Results from the above surveys are presented in Table 3. Although many of these studies used surveys that were developed by experts, they did not use instruments that had been given to both experts and lay people. This limitation is important to note since one of the criteria of admissibility states that in order for an expert to testify there must be general acceptance in the field that the research is valid. Therefore, even if lay people do not possess knowledge of some

limitations of eyewitness memory, it is irrelevant if experts do not agree that the research examining these limitations is valid.

Table 2

Explanations of the Knowledge of Eyewitness Behavior Questionnaire (KEBQ) eyewitness identification issues.

| Topic | Explanation |
|---------------------------------|---|
| Cross-race bias | Eyewitnesses are more accurate when identifying members of their own race as opposed to identifying members of other races. |
| Accuracy-confidence correlation | An eyewitnesses' confidence is not a predictor of identification accuracy. |
| Mug shot induced bias | Exposing an eyewitness to a mug shot of the suspect increases the chances of the witness will later identify that suspect from a lineup. |
| Event violence | Eyewitnesses' have better memory for nonviolent events as opposed to violent events. |
| Face memory | A face that is viewed only once will become indistinguishable from faces that have never been seen before after a period of several months. |
| Trained observers | Trained observers (such as police officers) are not better witnesses than the average person. |
| Interrogation procedure | Witnesses are less accurate and complete when asked specific questions as opposed to open-ended questions. |
| Stress | High levels of stress impair the accuracy of eyewitness memory. |
| Weapon focus | The presence of a weapon causes the witness to focus on the weapon and would interfere with his/her ability to remember the perpetrator's face. |
| Question wording | A witness' account of an event can be influenced by how the investigating police officer words the questions. |
| Age | Ability to recognize previously seen faces increases steadily to early adulthood and then declines after age 60. |
| Time estimation | Witnesses often over estimate the duration of the crime. |

Table 3

Authors' conclusions regarding lay knowledge of eyewitness memory issues on the KEBQ. Percentages of correct responses are noted in parenthesis.

| Topic | Deffenbacher & Loftus (1982) | None & Hollin (1987) | Seltzer, Lopes, & Venuti (1990) |
|---------------------------------|----------------------------------|----------------------------------|---------------------------------|
| Question wording | Accurate (86) | Accurate (86) | n/a |
| Stress | Accurate (82) | Accurate (68) | Accurate (55) |
| Time estimation | Accurate (68) | Accurate (55) | n/a |
| Mug shot induced bias | Accurate (61) Accurate (56) | Accurate (67) Accurate (60) | n/a |
| Cross-race bias | Accurate (56) Inaccurate (21) | Accurate (75) Inaccurate (25) | n/a Inaccurate (33) |
| Age | Inaccurate (48) | Accurate (65) | n/a |
| Weapon focus | Inaccurate (48) | Accurate (53) | n/a |
| Accuracy-confidence correlation | Inaccurate (28) | Inaccurate (15) | Inaccurate (36) |
| Face memory | Inaccurate (27) | Inaccurate (30) | n/a |
| Event violence | Inaccurate (24) | Inaccurate (12) | Inaccurate (13) |
| Interrogation procedure | Inaccurate (21) | Inaccurate (16) | n/a |
| Trained observers | Inaccurate (16) | Inaccurate (25) | Inaccurate (42) |

Note. Authors' considered subjects "accurate" when 50% or more answered correctly

In order to address this issue, Kassin and Barndollar (1992) developed a survey that used the 21 statements from the Kassin et al (1989) survey that assessed expert knowledge. The Kassin et al (1989) statements were used in order to directly compare students and community adults to eyewitness memory experts. This questionnaire had subjects indicate for each statement whether they believed it to be true or false. The authors found that there was no significant

difference between the students and community adults. Note that this finding is consistent with the Deffenbacher and Loftus (1982) and None and Hollin (1987) studies which also found no significant differences between students and community adults.

Kassin and Barndollar (1992) also found that 80% or more of both groups agreed with the statements pertaining to identification issues such as the wording of the questions, attitudes and expectations, and the effects of stress on accuracy. Chi-square tests revealed that subjects (students and community adults) and the experts significantly differed on 13 of the 21 issues such as lineup fairness, lineup instructions, show-ups, and exposure time. Thus, the authors conclude that expert testimony may be needed for many of these issues.

Recent studies have examined the relationship between agreement by experts on a more recent version of the survey (Kassin et al., 2001) and the knowledge expressed by lay people. Read (2004) surveyed Canadian community adults for their views on 29 of the 30 statements used in Kassin et al. (2001). Similarly, Lane and Alonzo (2004) used 26 of the 30 statements with an undergraduate student sample in Louisiana. Both studies found agreement of 80% or more for issues such as wording of the questions, confidence malleability, post event information, attitudes and expectations, and alcoholic intoxication. Lane and Alonzo (2004) also found high agreement on the issue regarding mugshot-induced bias (Read, 2004 did not include this issue on the survey). Read (2004) also found agreement of 80% or more for the issues concerning lineup instructions, child suggestibility, accuracy-confidence correlation, exposure time, and unconscious transference. Using 80% agreement as a threshold, a comparison between the two studies reveals that there are a number of issues on which potential jurors are in agreement with experts. However, the difference between these studies suggests that this

agreement could vary according to geography or other demographic differences. Results from these three studies are presented in table 4.

Table 4

Percentage of agreement ratings. Experts' agreement ratings from Kassin et al (2001) are noted in parenthesis.

| Topic | Opinions Concerning Eyewitness Identification Topics | | |
|------------------------------------|--|-------------|----------------------|
| | Kassin & Barndollar (1992) | Read (2004) | Lane & Alonzo (2004) |
| Wording of questions (98) | 90 | 96 | 93 |
| Lineup instructions (98) | 68 | 88 | 67 |
| Confidence malleability (95) | n/a | 86 | 85 |
| Mug-shot-induced bias (94) | n/a | n/a | 83 |
| Postevent information (94) | 75 | 92 | 92 |
| Child suggestibility (92) | n/a | 93 | 79 |
| Attitudes & expectations (91) | 89 | 92 | 97 |
| Alcoholic intoxication (90) | n/a | 93 | 97 |
| Hypnotic suggestibility (91) | 46 | 72 | n/a |
| Cross-race bias/general (90) | n/a | 75 | 43 |
| Cross-race bias/White ^a | 58 | n/a | n/a |
| Cross-race bias/Black ^a | 22 | n/a | n/a |
| Weapon focus (87) | 60 | 77 | 52 |
| Accuracy-confidence (87) | 49 | 88 | 64 |
| Forgetting curve (83) | 41 | 51 | n/a |
| Exposure Time (81) | 37 | 82 | 52 |
| Presentation format (81) | n/a | n/a | 30 |
| Unconscious transference (81) | 65 | 91 | 72 |
| Showups (74) | 63 | 86 | 62 |
| Description-matched foils (71) | n/a | 76 | 40 |
| Child Accuracy (70) | n/a | 53 | 27 |
| Lineup fairness (70) | 39 | 76 | 18 |
| False childhood memories (68) | n/a | 73 | 62 |
| Color perception (63) | 46 | n/a | n/a |
| Stress (60) | 82 | 91 | 69 |
| Older witnesses (50) | n/a | n/a | 38 |
| Hypnotic accuracy (45) | n/a | 65 | n/a |
| Identification speed (40) | n/a | 73 | 36 |
| Trained observers (39) | 39 | 54 | 46 |
| Event violence (37) | 28 | 68 | 23 |
| Discriminability (32) | n/a | 50 | 34 |
| Long-term repression (22) | n/a | 83 | 87 |
| Time estimation ^a | 62 | n/a | n/a |
| Hypnotic retrieval ^a | 18 | n/a | n/a |
| Sex differences ^a | 24 | n/a | n/a |

^aTopics used only in Kassin et al (1989).

Although survey research has revealed a number of interesting similarities and differences in knowledge between experts and lay people, this method of assessment raises other important questions. For instance, even when there is high agreement among subjects regarding eyewitness memory issues on survey studies, the question remains as to whether jurors could use this knowledge to make appropriate judgments in the courtroom. Put another way, the question is whether potential jurors' explicit beliefs (as assessed by surveys) are a good predictor of their ability to use this information to accurately assess the credibility of witnesses in the courtroom. Note that this issue also encompasses the question as to whether jurors might be sensitive to the topic in the courtroom, and yet not indicate this knowledge on their survey response.

The general question of the utility of verbally expressed beliefs/knowledge for predicting later behavior has been explored in other paradigms. For example, people do not always appear to use information in "real-world" problems they have acquired in other contexts (e.g., the classroom). For example, studies of "naïve physics" have found that students who completed a college physics course did not transfer that knowledge when they encountered a real world problem that involved principles they had learned in class (McCloskey, Caramazza, and Green, 1980). Another example comes from research on attitude-behavior consistency. In this paradigm many studies have found that expressed attitudes are often not consistent with later behavior (e.g., La Piere, 1934). Finally, research has suggested that sometimes people are able to accurately perform a task even without explicit knowledge of how they perform the task (e.g., Reber, 1989). Results from these various lines of research suggest that the survey method may not accurately assess eyewitness memory knowledge since endorsing a statement on a survey does not mean a person is able to properly use that knowledge to make a decision (nor does an

“inaccurate” survey response necessarily mean they would not make a correct assessment in the courtroom).

The present study attempted to address this matter by first assessing undergraduate students’ ability to identify eyewitness identification issues in the context of courtroom testimony, which is how jurors are actually exposed to these issues. We then assessed participants’ understanding of eyewitness identification issues with the questionnaire used in Lane and Alonzo (2004). The courtroom testimony was developed around the statements used in the survey in order to directly compare performance on the two measures. Experiment 1 examined the following 15 eyewitness identification issues from Kassin et al (2001): *stress, weapon focus, lineup fairness, alcoholic intoxication, mugshot induced bias, post event information, confidence malleability, unconscious transference, exposure time, trained observers, accuracy confidence correlation, cross race bias, showups, description matched lineups, and lineup instructions.*

The present research examined the utility of the survey method by exploring the relationship between subjects’ performance on the survey with their performance on a measure that more accurately represents how jurors would be exposed to eyewitness identification issues.

Experiment 1

Methods

Participants

Sixty undergraduate students participated in this study. Participants were enrolled in an upper level psychology course at Louisiana State University. All subjects were volunteers and received extra credit for their participation.

Materials

The materials for this study included a packet of trial transcripts of courtroom testimony and a questionnaire. The courtroom testimony packet consisted of five pages of transcript excerpts from five different mock cases. Each page had a brief description of a case followed by a transcript excerpt of courtroom testimony. The testimony was either directly from an eyewitness to a crime or from a police officer regarding an eyewitness.

Four versions of each excerpt were developed. Each excerpt contained testimony pertaining to three eyewitness identification topics. For 13 of the 15 topics, the testimony regarding the eyewitness identification topics was in one of two forms: negative or neutral/positive. When in the negative form, the information suggests that this specific aspect of the viewing conditions should (according to experts) negatively affect the accuracy of the eyewitness. For example, when a weapon is present and the witness focuses on the weapon instead of the perpetrator, then the witness's ability to identify the perpetrator may be impaired. When in the positive form the information suggests that this specific aspect of the viewing conditions was relatively ideal.

For two of the topics, accuracy confidence correlation and trained observers, the testimony regarding these topics was in one of two forms: misleading or neutral/positive. When

in the misleading form, the subjects may think the information suggests that this specific aspect of the witness or the viewing conditions increases the accuracy of the witness but (according to experts) it should not. For example, subjects may view trained observers to be better witnesses than the average person even though research suggests this is not so. Therefore, when the testimony pertaining to the topic of trained observers is in the misleading form, subjects may rate an eyewitness who is a police officer as more accurate than the average person. When in the neutral/positive form, the subjects are not led to think this specific aspect has an effect on the accuracy of the witness.

In 1 of the 4 versions of each excerpt, testimony for all topics was neutral/positive (considered the control version). For each of the other versions of each excerpt, testimony regarding one of the topics was problematic or misleading and neutral/positive for the other two. The design of the transcript excerpts is presented in Table 5 and an example of one of the excerpts is presented in Table 6.

The topics covered in the transcripts were the same topics used in the questionnaire. The questionnaire is an adapted version of the Kassin et al (2001) survey, and contained 15 of the original 30 statements concerning the accuracy of eyewitness memory. The answer choices following each statement were modified slightly to make them more comprehensible to a lay audience. Each statement was followed by an instruction to characterize their beliefs regarding the statement. Each statement had three possible answers: “true,” “false,” or “do not know.” For example, for the statement “The presence of a weapon impairs an eyewitness’s ability to accurately identify the perpetrator’s face,” subjects were to indicate if they believed the statement to be “true,” “false,” or “do not know.”

Table 5:

Design of the five transcript excerpts for Experiment 1.

| Transcript Excerpts (Cases) | Versions | | | |
|-----------------------------|---|--|---|---|
| | Group A | Group B | Group C | Group D |
| 1 | Stress (-) Weapon Focus (+) Lineup Fairness (+) | Stress (+) Weapon Focus (-) Lineup Fairness (+) | Stress (+) Weapon Focus (+) Lineup Fairness (-) | Stress (+) Weapon Focus (+) Lineup Fairness (+) CONTROL |
| 2 | Cross Race Bias (+) Showup (+) Alcohol Intoxication (+) CONTROL | Cross Race Bias (-) Showup (+) Alcohol Intoxication (+) | Cross Race Bias (+) Showup (-) Alcohol Intoxication (+) | Cross Race Bias (+) Showup (+) Alcohol Intoxication (-) |
| 3 | Mugshot Bias (-) Description Matched Lineup (+) Lineup Instructions (+) | Mugshot Bias (+) Description Matched Lineup (+) Lineup Instructions (+) CONTROL | Mugshot Bias (+) Description Matched Lineup (-) Lineup Instructions (+) | Mugshot Bias (+) Description Matched Lineup (+) Lineup Instructions (-) |
| 4 | Post Event Information (-) Accuracy Confidence (+) Trained Observers (+) | Post Event Information (+) Accuracy Confidence (-) Trained Observers (+) | Post Event Information (+) Accuracy Confidence (+) Trained Observers (+) CONTROL | Post Event Information (+) Accuracy Confidence (+) Trained Observers (-) |
| 5 | Confidence Malleability (-) Unconscious Transference (+) Exposure Time (+) | Confidence Malleability (+) Unconscious Transference (-) Exposure Time (+) | Confidence Malleability (+) Unconscious Transference (+) Exposure Time (-) | Confidence Malleability (+) Unconscious Transference (+) Exposure Time (+) CONTROL |

(-) Negative or Misleading

(+) Neutral/Positive

Table 6:

An example of a trial transcript excerpt. The three identification topics are underlined and noted in bold.

You are about to read an excerpt taken from transcripts of a trial where a defendant has been accused of robbing a bank at gunpoint. The following is direct testimony from the investigating police officer, Ryan Wilson, regarding an eyewitness. Officer Wilson has identified the defendant as the person he investigated and arrested for this crime. After you read the testimony please answer the questions that follow.

DIRECT EXAMINATION BY MR. MCGILL (in progress):

Q. Officer Wilson, you were the investigating officer for this alleged robbery of First Union Bank on January 2nd of this year?

A. Yes.

Q. When you arrived on the scene, did you interview any eyewitnesses to the crime?

A. Yes. Besides the bank teller, I interviewed Susan Davis, a customer.

Stress (negative)

Q. When you interviewed Ms. Davis what was her demeanor?

A. Ms. Davis was quite rattled and stressed as she gave the description of the perpetrator.

Q. Did Ms. Davis describe where she was standing in relation to the alleged perpetrator?

A. Yes, she was the customer being serviced by the bank teller to the perpetrator's immediate left.

Q. What if anything drew Ms. Davis's attention to the alleged perpetrator?

A. A flash of black metal caught her eye.

Q. Did Ms. Davis tell you anything about a weapon?

A. The witness said the perpetrator had a revolver.

Weapon Focus (neutral/positive)

Q. Was she able to give a detailed description of the revolver?

A. Not really. Ms. Davis said she focused on the perpetrator, not the gun.

Q. Why was the defendant a suspect for this crime?

A. He matched the description given by Ms. Davis.

Q. Was Ms. Davis able to later identify the defendant?

A. Yes. Ms. Davis identified the defendant from a lineup consisting of the defendant and five other men.

Lineup Fairness (neutral/positive)

Q. How did you choose the other members of the lineup?

A. The other members were selected because they matched the defendant's race and they resembled the defendant.

1. Based solely on the above testimony do you think the eyewitness is accurate or inaccurate?

| | | | | | | |
|----------------|---|---|---|---|---|----------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Very Confident | | | | | | Very Confident |
| Inaccurate | | | | | | Accurate |

2. What was the critical factor in reaching your decision for question #1?

Procedure

Subjects first evaluated the courtroom testimony packet. They were instructed to take the role of a juror evaluating courtroom testimony. Subjects were asked to read the description of each mock case and the transcript excerpt of testimony that followed. After reading the testimony they answered two questions. The first question asked them to rate the eyewitness as inaccurate or accurate on a 1 to 7 scale based solely on the testimony. The second question asked them to list the critical factor in reaching their decision to the first question. Subjects answered the questionnaire as soon as they completed the transcript packet.

Results

The first question in the transcript packet, which asked subjects to rate the eyewitness as accurate or inaccurate, was analyzed through a series of independent t tests. These tests revealed significant differences ($p < .05$) between ratings for the eyewitnesses in the control versions and ratings for the eyewitnesses in the versions containing the following negative issues: *stress*, *weapon focus*, *lineup fairness*, *alcoholic intoxication*, *mugshot induced bias*, *post event information*, *confidence malleability*, *unconscious transference*, and *exposure time*. That is, subjects rated eyewitnesses in the control versions as significantly more accurate than the eyewitnesses in the experimental versions. Ratings for the eyewitnesses in the versions containing the following negative issues did not significantly differ from the ratings for the eyewitnesses in the control versions: *cross race bias*, *showups*, *description matched lineups*, and *lineup instructions*. That is, subjects did not rate the eyewitnesses in the control versions as more accurate than the eyewitnesses in the experimental versions. Ratings for the eyewitnesses in the versions with misleading topics (*accuracy confidence correlation* and *trained observers*) did not significantly differ from the control versions. That is subjects did not rate trained observers and

confident witnesses as more accurate than other witnesses (although means trended higher in the misleading version).

For the second question in the transcript packet, which asked subjects to list the critical factor in reaching their decision to question one, proportions were calculated by coding correct responses (when the negative topic was mentioned) as “1” and omitted responses (when the negative topic was not mentioned) as “0.” The percentage of times the negative topics were mentioned ranged for 0% (lineup instructions) to 93% (mugshot induced bias). Two things should be noted about these percentages. First, for a number of issues (e.g., the effect of stress), participants rated witnesses as less accurate than controls, yet only mentioned the effect of stress as being critical to their judgment 33% of the time. Second, these percentages include situations where the participants mentioned the problematic topic as the critical factor even though they found the witness to be accurate in terms of their ratings. For example, some of the participants indicated the showup identification as the critical factor in finding the witness accurate. Results from transcript packet questions are also shown in Table 7.

Results from the questionnaire are presented in Table 8. By agreement of 80% or more students appear to have knowledge of the issues concerning *stress*, *postevent information*, *alcoholic intoxication*, and *unconscious transference*. Comparisons were made between performances on the survey to performances on the transcripts by excluding subjects that did not agree with the statements pertaining to the eyewitness memory issues on the survey. Therefore only those that agreed with the statements were included in the following analysis.

A series of independent t-tests revealed that subjects who agreed with the statements on the survey followed the same pattern of results as reported above with the exception of the topic of alcohol intoxication which was significantly different from the control when all subjects were

Table 7

Differences between ratings for the experimental versions and the ratings for the control versions. Also, proportions of times the eyewitness identification issue was mentioned in question two. The values in parentheses are standard deviations.

| Topic | Transcript | Excerpts |
|----------------------------|-------------------------------------|--------------------------------|
| | Question #1 Difference Scores | Question #2 Topic Mentioned |
| Alcohol Intoxication | 1.07 (1.2)* | 87% |
| Post Event Information | 1.06 (1.6)* | 73% |
| Stress | 1.27 (1.4)* | 33% |
| Unconscious Transference | 3.27 (1.7) * | 80% |
| Confidence Malleability | 3.53 (1.6)* | 47% |
| Showup | -.80 (1.3) | 40% |
| Lineup Instructions | .27 (1.2) | 0% |
| Mugshot Bias | 1.87 (1.4)* | 93% |
| Cross Race Bias | .14 (1.1) | 7% |
| Accuracy-Confidence | -.47 (1.2) | 40% |
| Weapon Focus | 1.27 (1.6)* | 47% |
| Exposure Time | 3.53 (1.4)* | 73% |
| Lineup Fairness | .87 (.96)* | 33% |
| Trained Observers | -.60 (1.1) | 53% |
| Description Matched Lineup | .33 (1.5) | 27% |

* $p < .05$, $n=15$

included but failed to reach significance in this analysis. Therefore, subjects who endorsed the statements pertaining to stress, weapon focus, lineup fairness, mugshot induced bias, post event information, confidence malleability, unconscious transference, and exposure time as true on the survey accurately rated eyewitnesses in the control versions as significantly more accurate than

the eyewitnesses in these experimental versions. That is, students endorsed these statements as true on the survey and properly used that knowledge in their decision on the transcripts. However, subjects who endorsed the statements pertaining to cross race bias, showups, description matched lineups, alcoholic intoxication, and lineup instructions did not rate the eyewitnesses in the control versions as more accurate than the eyewitnesses in these experimental versions. That is, even students who endorsed these statements as true on the survey did not properly apply that knowledge in their decision on the transcripts.

Table 8

Percentages of student agreement with the topics on the questionnaire.

| Topic | Students Agree Statement Is True % N = 60 |
|---------------------------|--|
| Alcoholic intoxication | 97 |
| Postevent information | 88 |
| Stress | 87 |
| Unconscious transference | 85 |
| Confidence malleability | 78 |
| Showup | 77 |
| Lineup instructions | 73 |
| Mug-shot-induced bias | 65 |
| Cross-race bias | 65 |
| Accuracy-confidence | 63 |
| Weapon focus | 53 |
| Exposure time | 50 |
| Lineup Fairness | 48 |
| Trained Observers | 47 |
| Description Matched foils | 43 |

Discussion

The results indicate that subjects were sensitive to 9 of the 15 issues in the context of courtroom testimony. Specifically, when the transcript excerpts contained these eyewitness identification issues in their negative form, subjects rated the eyewitness as less accurate than

when these issues were phrased in their positive form. Also the survey appears to accurately measure knowledge of some eyewitness memory issues but not others, in that when participants endorsed statements as true on the survey, they properly used that knowledge in their decision on the transcripts for some issues but not others.

However, there are a number of limitations to the findings of this study. First, although subjects did not rate trained observers and confident witnesses as more accurate than other witnesses (and thus these issues may not be problematic for jurors), this finding may be due to low statistical power on account of a small sample size. Therefore, in Experiment 2 sample size was increased in order to increase power. Second, because the answer choices on the transcripts differed from the answer choices on the survey, the only way to compare the two measures was to exclude subjects based on their responses on the survey. Because surveys are the most common method used to assess eyewitness memory knowledge it is important to compare these two measures on a similar scale in order to understand the relationship between stated knowledge on a survey and the ability to use this knowledge in the courtroom. Specifically, this comparison would help determine if the survey is a valid measure of potential jurors' ability to use knowledge about eyewitness memory. Third, participants may have appeared to be sensitive to these eyewitness identification issues because we compared the issues in their extreme forms (negative verses positive). An omitted version, which does not refer to the topic, is needed in order to determine if subjects would rate the witnesses in the negative versions as less accurate than witnesses in the versions where the issue is not present. Also, question two of the answer sheet, which asked subjects to indicate the critical factor in reaching their decision for question one, was modified in order to allow subjects to indicate *how* critical factors influenced their decision (e.g. finding the witness accurate or inaccurate). In Experiment 1, participants' answers

were ambiguous as to whether they supported judgments of accuracy or inaccuracy. Thus, these changes to the format allow a more fine-grained assessment of subjects' sensitivity to eyewitness memory issues. Experiment 2 addressed these issues.

Experiment 2

Methods

Participants

Three hundred and fifty-two undergraduate students enrolled in introductory psychology courses participated in this study. All subjects were volunteers and receive extra credit for their participation.

Materials

The packet of trial transcripts of courtroom testimony used in Experiment 1 was also used in this study with several modifications.

Five versions of each excerpt were developed. Each excerpt contained testimony pertaining to two eyewitness identification topics instead of three. The number of topics examined in Experiment 1 was reduced from 15 to 10. For 9 of the 10 topics, the testimony regarding the eyewitness identification topics was in one of three forms: negative, neutral/positive, or omitted. When in the negative form, the information suggests that this specific aspect of the viewing conditions should (according to experts) negatively affect the accuracy of the eyewitness. When in the neutral/positive form the information suggests that this specific aspect of the viewing conditions was relatively ideal. When in the omitted form, the topic is not referred to. An example of the three forms of a topic is presented in table 9.

For one of the topics, accuracy confidence correlation, the testimony was in one of three forms: misleading, neutral/positive, or omitted. When in the misleading form, the subjects may think the information suggests this specific aspect of the viewing condition increases the accuracy of the witness but (according to experts) it should not. When in the neutral/positive form, the subjects are not led to think this specific aspect has an effect on the accuracy of the

witness. When in the omitted form, the topic is not referred to. For example, in the misleading form subjects may think that a witness that expresses high confidence in their identification is more likely to be accurate than someone who does not express confidence even though research suggests this is not so.

Table 9

An example of the three forms of the topic post event information.

| | Post Event Information | Testimony |
|------------------|------------------------|--|
| Negative | | Q. Did you talk to anyone about what you saw? A. Yes. Another witness and I discussed what the guy looked like before the police arrived. |
| Neutral/Positive | | Q. Did you talk to anyone about what you saw? A. Only the police. They arrived very quickly and immediately separated the witnesses and told us not to discuss what had happened. |
| Omitted | | Q. Did the police question you at the scene? A. Yes they questioned me at the scene and they brought me to the police station to answer a few more questions. |

In 1 of the 5 versions of each excerpt, testimony for both topics was omitted (considered the control version). For each of the other versions of each excerpt, testimony regarding one of the topics was negative, misleading, or positive and the other topic was in its omitted form. The design of the transcript excerpts is presented in Table 10.

The questionnaire used in Experiment 1 was also modified for this study. The question and answer choices were changed to a 1 to 7 scale with 1 being “very confident true” and 7 being “very confident false”. The answer choices were modified in order to more easily compare performance on the survey to performance on the transcripts. Also the questionnaire contained 26 of the 30 statements concerning the accuracy of eyewitness memory from Kassin et al (2001).

The additional statements served as filler information so that the 10 topics covered in the transcripts would not stand out.

Table 10

Design of the five transcript excerpts for Experiment 2

| Transcript Excerpts (Cases) | Versions | | | | |
|-----------------------------|---|---|---|---|---|
| | Group A | Group B | Group C | Group D | Group E |
| 1 | Exposure Time (+) Weapon Focus (o) | Exposure Time (o) Weapon Focus (-) | Exposure Time (-) Weapon Focus (o) | Exposure Time (o) Weapon Focus (+) | Exposure Time (o) Weapon Focus (o) CONTROL |
| 2 | Cross Race Bias (o) Alcohol Intoxication (o) CONTROL | Cross Race Bias (+) Alcohol Intoxication (o) | Cross Race Bias (o) Alcohol Intoxication (+) | Cross Race Bias (-) Alcohol Intoxication (o) | Cross Race Bias (o) Alcohol Intoxication (-) |
| 3 | Mugshot Bias (-) Lineup Instructions (o) | Mugshot Bias (o) Lineup Instructions (o) CONTROL | Mugshot Bias (o) Lineup Instructions (-) | Mugshot Bias (+) Lineup Instructions (o) | Mugshot Bias (o) Lineup Instructions (+) |
| 4 | Post Event Information (+) Accuracy Confidence (o) | Post Event Information (o) Accuracy Confidence (+) | Post Event Information (o) Accuracy Confidence (o) CONTROL | Post Event Information (-) Accuracy Confidence (o) | Post Event Information (o) Accuracy Confidence (-) |
| 5 | Confidence Malleability (-) Unconscious Transference (o) | Confidence Malleability (o) Unconscious Transference (-) | Confidence Malleability (+) Unconscious Transference (o) | Confidence Malleability (o) Unconscious Transference (o) CONTROL | Confidence Malleability (o) Unconscious Transference (+) |

(-) Negative
(+) Neutral/Positive
(o) Omitted

Procedure

The procedure remained the same except that 300 subjects (60 per version) completed both the transcripts and the questionnaire and 52 subjects completed only the survey in order to

assess whether completing the transcript packet before answer the questionnaire, influenced subjects' answers.

Results

Comparisons were made through a series of independent t-tests between the group that completed both the transcripts and the questionnaire and the control group that only completed the questionnaire and revealed no significant differences between the groups on the statements that were examined in the transcripts. Therefore the results from the questionnaire include all participants. Responses to the statements on the survey were coded as “agree” (selecting a 1 through 3) or “disagree” (selecting a 4 through 7). The percentage of agreement ranged from 90% (alcohol intoxication) to 36% (accuracy-confidence). Results from the questionnaire are presented in Table 11.

Table 11

Percentages of student agreement (N = 352) with the topics on the questionnaire.

| Topic | % Agree Statement Is True | Average Rating Response |
|--------------------------|---------------------------|-------------------------|
| Alcoholic intoxication | 90 | 1.94 |
| Confidence malleability | 74 | 2.79 |
| Mug-shot-induced bias | 73 | 2.96 |
| Postevent information | 72 | 2.99 |
| Lineup instructions | 69 | 2.96 |
| Exposure time | 57 | 3.37 |
| Unconscious transference | 56 | 3.39 |
| Weapon focus | 56 | 3.51 |
| Cross-race bias | 51 | 3.64 |
| Accuracy-confidence | 36 | 4.12 |

Are subjects sensitive to topics when evaluating trial testimony?

In order to examine participants' knowledge of eyewitness memory, the first question in the transcript packet, which asked subjects to rate the eyewitness as accurate or inaccurate, was

analyzed through a series of One-way ANOVAs. These tests were significant by transcript version for some topics: *exposure time*, $F(2, 177) = 16.91$, $MSE = 25.67$, *unconscious transference*, $F(2, 177) = 48.31$, $MSE = 86.87$, *post event information*, $F(2, 177) = 8.89$, $MSE = 18.20$, *confidence malleability*, $F(2, 177) = 15.63$, $MSE = 28.42$, *alcohol intoxication*, $F(2, 177) = 41.46$, $MSE = 56.02$, and *mugshot bias* $F(2, 177) = 4.32$, $MSE = 10.55$. Followup Tukey HSD tests revealed significant differences ($p < .05$) between ratings for the eyewitnesses in the negative versions and ratings for the eyewitnesses in the control and neutral/positive versions for the topics *exposure time*, *unconscious transference*, and *confidence malleability*. That is, subjects rated eyewitnesses in the control and neutral/positive versions as significantly more accurate than the eyewitnesses in these negative versions. Ratings for the eyewitnesses in the control and neutral/positive versions did not differ for these topics.

Ratings for the eyewitness in the neutral/positive version containing the *mugshot bias* topic significantly differed from the ratings for the eyewitnesses in the negative and control versions. That is, subjects rated eyewitnesses in the control and negative versions as significantly less accurate than the eyewitness in the neutral/positive version. Ratings for the eyewitnesses in the control and negative versions did not differ for this topic.

Ratings for the eyewitness in the negative version containing the *post event information* topic significantly differed from the ratings for the eyewitness in the neutral/positive version but not the control version. That is, subjects rated the eyewitness in the negative version as significantly less accurate than the eyewitness in the neutral/positive version. Ratings for the eyewitnesses in the neutral/positive and control versions did not differ for this topic.

Ratings for the eyewitnesses in all versions containing the topic *alcohol intoxication* significantly differed. That is, subjects rated the eyewitness in the negative version as

significantly less accurate than the eyewitness in the neutral/positive version, which was rated significantly less accurate than the eyewitness in the control version.

Ratings for the eyewitnesses in the versions containing the following negative issues did not significantly differ from the ratings for the eyewitnesses in the control and neutral/positive versions: *weapon focus*, $F(2, 177) = .439$, $MSE = .772$, *cross race bias*, $F(2, 177) = 2.80$, $MSE = 4.88$, and *lineup instructions* $F(2, 174) = 1.95$, $MSE = 4.31$. That is, subjects did not rate the eyewitnesses in the control and neutral/positive versions as more accurate than the eyewitnesses in the negative versions.

Ratings for the eyewitnesses in the version with the misleading topic (accuracy confidence correlation) did not significantly differ from the control and neutral/positive versions. That is, subjects did not rate confident witnesses as more accurate than other witnesses. Results from the first question in the transcript packet are presented in Table 12.

Are subjects who agree with a topic on the survey more likely to appropriately evaluate trial testimony on that topic?

In order to examine the relationship between the survey and the transcripts, the two measures was analyzed through a series of 2 (agree or disagree with survey statements) x 3 (negative, neutral/positive, or control version) ANOVAs on each topic (with the exception of the transcript and survey statement containing the alcohol intoxication topic because there were not enough subjects in the “disagree” group to compare statistically). There was no significant effect of statement (agree or disagree) on any topic with $F_s(1, 174) = .001$ to 3.175. That is, subjects who indicated that they agreed with the statements on the survey did not rate the eyewitnesses in the negative versions as less accurate than those that did not agree with the statement on the survey. However, there was a significant interaction between statement and version for the post

event information topic. A test of simple effects showed subjects that agreed ($M= 5.26$) and subjects that disagreed ($M=4.24$) with the post event information statement on the survey significantly differed on their ratings for the eyewitnesses in the negative post event information version, $F(1, 58) = 4.51$, $MSE = 12.69$. That is, subjects that disagreed with the statement rated the eyewitness in the negative version as less accurate than the subjects that agreed with the statement. Note that this finding is opposite to the predicted direction.

Table 12

Proportions of ratings for question one of the transcripts. The values in parentheses are standard deviations.

| Topic | Transcript Version | | |
|--------------------------|-------------------------|-------------------------|---------------------------|
| | Negative (-) | Neutral/Positive (+) | Control (both omitted) |
| Alcohol Intoxication | 3.67 (1.1) ^b | 5.55 (1.2) ^a | 4.98 (1.3) ^c |
| Confidence Malleability | 4.45 (1.6) ^b | 5.72 (1.2) ^a | 5.55 (1.2) ^a |
| Mugshot Bias | 4.15 (1.6) ^b | 4.90 (1.6) ^a | 4.20 (1.5) ^b |
| Post Event Information | 4.97 (1.7) ^b | 6.07 (1.0) ^a | 5.57 (1.5) ^{a,b} |
| Lineup Instructions | 4.62 (1.5) | 4.70 (1.5) | 4.20 (1.5) |
| Exposure Time | 4.20 (1.4) ^b | 5.47 (1.1) ^a | 5.12 (1.2) ^a |
| Unconscious Transference | 3.27 (1.6) ^b | 5.07 (1.2) ^a | 5.55 (1.2) ^a |
| Weapon Focus | 4.90 (1.5) | 5.07 (1.3) | 5.12 (1.2) |
| Cross Race Bias | 4.52 (1.5) | 5.03 (1.2) | 4.98 (1.3) |
| Accuracy-Confidence | 5.97 (1.2) | 5.95 (1.0) | 5.57 (1.5) |

Means with different subscripts indicate significant differences.

$p < .05$

Because there were not enough subjects in the “disagree” group to analyze in a 2 x 3 ANOVA, the transcript and survey statement containing the alcohol intoxication topic were

compared by first excluding subjects that did not agree with the statement pertaining to alcohol intoxication on the survey. Therefore only those that agreed with the statement were included in the analysis. This reduced the sample size from 180 to 157. A one-way ANOVA on ratings was significant by version, $F(2,154) = 39.16$, $MSE = 53.62$. A followup Tukey HSD test showed that the ratings for the eyewitness in the neutral/positive ($M=5.52$) and the control ($M=5.00$) versions significantly differed from the ratings in the negative version ($M=3.61$). That is, students that endorsed this statement as true on the survey correctly rated the eyewitness in the negative version as less accurate than the eyewitnesses in the control and the neutral/positive versions. Ratings for the neutral/positive version and the control version did not differ.

Are subjects' answers on the survey correlated with their answers on the trial testimony?

To examine further the relationship between survey responses and transcript ratings, correlations were first run between the ratings for the negative and neutral/positive versions and responses to the survey statements and revealed no significant correlations between the two measures. We then reverse coded the ratings for the negative and neutral/positive versions and examined them together in order to increase sample size to increase the chance of detecting a correlation if present. We found a significant negative correlation between the ratings for the alcohol intoxication transcript ($M=3.40$) and the alcohol intoxication statement ($M=2.00$), $r = -.202$. That is, as the ratings for the eyewitness in the transcripts increases (towards finding the witness accurate), the responses to the survey statement decreases (towards finding the witness inaccurate). No other correlations were significant. Finally, ANCOVAs were run for each transcript topic using survey ratings for a given topic as a covariate. None of the analyses revealed a significant effect of the covariate. Thus, based on the ANOVA, ANCOVA and correlational analyses, it appears there is weak or little relationship between beliefs expressed on

each issue on an eyewitness memory survey and evaluation of eyewitness testimony where each issue was present. Thus, knowing a given person's response on a survey topic was not predictive of whether he/she would be able to correctly evaluate a witness whose testimony should be affected that factor.

Are overall responses on the survey predictive of overall evaluation of trial testimony?

As noted above, correlations between individual responses to survey topics and performance on the transcripts were not significant. However, it is possible that aggregate performance on survey topics is predictive of which topics participants are likely to be sensitive to when evaluating the transcripts. Thus, a correlation was computed between the mean agreement on the 10 topics on the survey with the difference between the ratings of the neutral/positive and the negative versions. The analysis revealed a strong positive correlation that did not reach significance due to small sample size $r(9) = .556, p = .079$. Although this correlation was not statistically significant, statistical power is an issue and knowing how participants did overall on a survey topic accounted for a considerable amount of variance ($r^2 = .31$) in predicting the topics to which participants were sensitive in the trial transcripts. For example, for two of the issues that the participants did not discriminate between the different versions of the transcripts (weapon focus and cross race bias) the statements regarding these issues on the survey also generated the least agreement.

Do subjects mention the appropriate factor after evaluating trial testimony?

For the second question in the transcript packet, which asked subjects to list the critical factor in reaching their decision to question one, proportions were calculated by coding correct responses (when the topic was correctly mentioned when finding the witness accurate/inaccurate) as "1", omitted responses (when the topic was not mentioned) as "0", and

incorrect responses (when the topic was incorrectly mentioned when finding the witness accurate/inaccurate) as “-1”. The percentage of correct mentions of the topics ranged for 0% to 87%. The percentage of incorrect mentions of the topics ranged for 0% to 52%. The percentage of times the topics were omitted ranged for 0% to 100%. Overall, participants rarely mentioned the topic as influencing their decision in the opposite direction, but often did not mention the factor at all. When phrased in the negative most did not include the topic as a reason for finding the witness accurate, except for the issues regarding post event information, weapon focus, and the accuracy confidence correlation. For example, 28% of the time participants indicated that they found the witness to be accurate because the witness received post event information from other witnesses. Further, when the transcript is positive, people often do not include that information even for issues to which they appear sensitive. Results for the second question are shown in Table 13.

In order to determine if the ratings for the eyewitnesses differed for participants that correctly mentioned the critical factor versus those that omitted the critical factor, comparisons were made between the two groups through a series of independent samples t tests. The focus of these analyses was on performance in the negative versions of the transcripts. These analyses revealed significant differences between the groups in their ratings for the eyewitnesses for the topics *confidence malleability*, $t(45) = -4.56$, *mugshot bias*, $t(45) = -3.85$, *weapon focus*, $t(40) = -3.76$ and *post event information*, $t(41) = -4.60$. That is, subjects that correctly mentioned the critical factor rated the eyewitness as significantly less accurate than those that omitted the critical factor.

However, the two groups did not differ in their ratings for the eyewitnesses in the negative versions for the topics *exposure time*, $t(55) = -.991$ and *unconscious transference*, $t(41)$

= -1.06. The topics *alcohol intoxication*, *lineup instructions*, *cross race bias*, and *accuracy confidence* were not included in this analysis because there were not enough subjects in the “correctly mentioned” group to compare statistically. Although these analyses were exploratory, the results suggest that for some (but not all) topics, participants are explicitly aware of the factor that impacts their assessment of eyewitness accuracy.

Table 13

Proportions of responses for question two of the transcripts.

| Topic | Negative/Misleading (-) | | | Neutral/Positive (+) | | |
|--------------------------|----------------------------|-----|------|-------------------------|-----|------|
| | “1” | “0” | “-1” | “1” | “0” | “-1” |
| Alcohol Intoxication | 87 | 13 | 0 | 30 | 70 | 0 |
| Confidence Malleability | 43 | 52 | 5 | 27 | 72 | 2 |
| Mugshot Bias | 52 | 45 | 3 | 45 | 53 | 2 |
| Post Event Information | 47 | 25 | 28 | 30 | 70 | 0 |
| Lineup Instructions | 10 | 90 | 0 | 18 | 78 | 3 |
| Exposure Time | 73 | 22 | 5 | 45 | 55 | 0 |
| Unconscious Transference | 55 | 45 | 0 | 27 | 73 | 0 |
| Weapon Focus | 38 | 40 | 22 | 13 | 87 | 0 |
| Cross Race Bias | 0 | 100 | 0 | 0 | 100 | 0 |
| Accuracy-Confidence | 0 | 48 | 52 | 12 | 88 | 0 |

“1” The topic was correctly mentioned for finding the witness accurate/inaccurate.

“0” The topic was not mentioned.

“-1” The topic was incorrectly mentioned for finding the witness accurate/inaccurate.

Discussion

The results of Experiment 2 indicate that participants were sensitive to the issues regarding *exposure time*, *alcohol intoxication*, *unconscious transference*, *post event information*, and *confidence malleability* in the context of mock courtroom testimony. Specifically, when the transcript excerpts contained these eyewitness identification issues in their negative form, participants rated the eyewitness as less accurate than when these issues were phrased in their positive form or when the topic was omitted. Participants were also sensitive to the issue regarding *post event information* and *mugshot bias* when the topics were in their extreme forms (negative verses neutral/positive).

In addition, participants did not rate highly confident witnesses as more accurate than witnesses who were portrayed as having less confidence (or for which confidence information was omitted). Therefore, participants were not susceptible to this eyewitness identification issue. In one respect, these findings suggest that expert testimony on these issues may not meet the second criterion of admissibility because it would not assist the triers of fact (assuming that the sensitivity noted above is at an “optimal” level for a given factor). However, it is less clear that these results suggest the knowledge is “common sense” to jurors in that they do not necessarily endorse these beliefs on a survey or convey them when justifying their ratings. Participants did not appear to be sensitive to issues such as the *cross race bias*, *weapon focus*, and *lineup instructions* in that their ratings did not differ by transcript version.

Participants’ stated beliefs on each issue on the survey did not predict how they would behave when evaluating a witness where these eyewitness identification issues were present. Correlations between survey responses on a given topic and responses on the transcripts were not statistically significant (except one weak correlation in a direction contrary to the hypothesis).

Also, there were no differences in ratings on the transcripts between those that agreed and disagreed with the statements on the survey. However, overall beliefs on the survey were strongly correlated with performance on the transcripts (although this analysis did not reach significance due to low statistical power). Based on this finding it is concluded that although the survey may not be a good measure for predicting individual performance, it may predict which issues are likely to be most problematic for the majority of jurors. Therefore, if the goal of assessing eyewitness memory knowledge is to know what a particular juror will do when faced with a particular issue, then the survey may not be effective. However, if the goal is to determine overall which issues are most likely to cause difficulty for potential jurors then survey measures may have some utility. However surveys are limited in that you are forced to rely on descriptive statistics, such as frequency information, when determining what issues are potential problems for jurors and thus it is ultimately left to the researcher to determine what criterion an issue needs to reach in order to be significant.

Although participants were sensitive to the issues in terms of how they rated the eyewitnesses, they did not always list the correct issues as the reason why they made their decision. Therefore, in some cases even though participants' ratings are appropriately sensitive to the described witnessing conditions, they are often unable to state the correct reason why they rated the witness as accurate or inaccurate. Further, for three issues participants indicated the impairing factor as a reason for finding the witness accurate. This dissociation between performance and explicit knowledge could possibly lead to errors when deliberating with fellow jurors. For example, a juror may independently make the correct decision as to the accuracy of an eyewitness but when they meet with other jurors they give the wrong reason why they made their decision and subsequently lead others astray. For example, for the issue regarding the

accuracy confidence correlation, ratings for the different versions did not differ, but 52% indicated that they found the witness accurate based on the fact that they were highly confident. Therefore, if these witnesses were to discuss this incorrect reason for their decision with others, then they could influence others with this incorrect information. Further research is needed to explore how the jury deliberation process might influence judgments made about the accuracy of eyewitness testimony.

The results of transcript performance for Experiment 2 were consistent with Experiment 1 with the exception of the issue of weapon focus. In Experiment 1, ratings for the negative and neutral/positive versions significantly differed, however, in Experiment 2, the ratings for the different versions did not significantly differ. This could be due to a slight modification of the neutral/positive version in Experiment 2. In Experiment 1, the weapon was mentioned in the neutral/positive version but the weapon was not mentioned in the neutral/positive version in Experiment 2. Overall, the transcript results of Experiment 1 were replicated for the subset of issues investigated in both experiments.

However, the pattern of agreement with the statements from the survey in Experiment 2 was inconsistent with Experiment 1. Specifically, there was a relationship between survey response and transcript performance for a number of issues in Experiment 1, but there was no significant relationship between these measures for any topic in Experiment 2. It is not clear which single factor is responsible for this finding. Some of the transcripts in Experiment 2 were modified from Experiment 1, and answers on the survey were given on a response scale rather than simply agree/disagree. Further, there were sample differences. Experiment 1 participants consisted of psychology students in an upper level psychology course that may have been exposed to these eyewitness identification issues in their course work. Experiment 2 consisted of

students enrolled in an introductory psychology course. Thus, one reason for the difference could be differences in relevant knowledge. At this point, it is not clear which factor (or combination) is responsible for the discrepant results.

General Discussion

Previous research has relied heavily on survey responses as an assessment of eyewitness memory knowledge. The results of both experiments highlight the strengths and weaknesses of this measure. Perhaps the most important finding of the current study is that a survey response for a given issue is not necessarily predictive of a person's ability to account for that factor when assessing the reliability of an eyewitness. Specifically, participants who endorsed a belief in the truth of a given factor on a survey did not rate witnesses whose performance should be negatively impacted by that factor differently in the transcripts than those who indicated that they did not believe that the given factor should impact eyewitness memory. This finding suggests that surveys may not be the optimal way to assess how a particular juror will respond to an issue in the context of trial testimony. However, a second question is whether large-scale surveys predict the eyewitness issues that would be problematic for jurors when evaluating testimony. The substantial (albeit statistically nonsignificant) correlation between overall performance on the surveys and the transcripts suggests that this is the case. Thus, knowing that there is greater agreement on a given issue is predictive of whether participants will be able to appropriately modify their assessments of witnesses. Finally, whether assessed by survey or by transcript, potential jurors appear to have knowledge of a number of issues that eyewitness memory experts agree are important and scientifically validated. Taken alone, this suggests that there are a number of factors for which expert testimony does not meet the second criterion of admissibility in that it would not assist the trier(s) of fact (because they already hold consistent beliefs). However, there are a number of issues that need to be clarified by future research before such a conclusion can be made. For example, although the differences between negative and control transcripts were statistically significant, it is not entirely clear if this "sensitivity" would be

meaningful in real-life cases. Further, it is not known whether the presence of expert testimony would further sensitize potential jurors to these issues, or simply make them more skeptical of all eyewitness testimony. What is clear is that participants appear to be sensitive to a number of eyewitness memory issues in ways that would not have been entirely predicted by previous survey research. The implications of this finding await further study.

The finding that expressed beliefs are not predictive of actual behavior is not a new finding in psychology. This dissociation between what people say and what people do is quite common. Research in the social psychology literature has repeatedly shown that expressed attitudes are not always predictive of behavior. For example, in the classic study by LaPiere (1934) on prejudice, he found that people who verbally expressed, on a questionnaire, that they would never serve or accommodate someone of Japanese decent were found to behave just the opposite way when a Japanese couple came to their place of business.

Furthermore, in this study we found that participants that did well on the transcripts could not always give the correct reason for their decisions. Likewise, in the explicit/implicit learning literature, a common finding is that people are not always able to accurately articulate the bases for their performance (Reber, 1989). Therefore, the results of this study are consistent with a vast psychological literature that suggests that people's explicit knowledge is not always predictive of how they behave.

There are several limitations to generalizing the conclusions of this study. First, this is the first study of its kind that developed testimony around eyewitness identification issues that experts agree merit testimony and we only examined a subset of these issues. Therefore, other issues need to be investigated in this manner in order to determine if people are sensitive to these issues when encountered in the context of mock testimony. In addition, the participants were

undergraduates in an introductory psychology course, and therefore it would be prudent to determine if the results generalize to juror-eligible adults from other demographic or geographic backgrounds.

Second, the generalizability of the transcript results to real-life jurors rests on the assumption that attorneys ask the correct questions of witnesses that, in turn, elicit a response highlights these eyewitness memory issues. If the proper questions are not asked then this information may not be mentioned in the testimony and jurors will not detect this issue as a problem. For example, the transcript regarding post event information included the attorney asking the question “Did you talk to anyone about what you saw?” If the attorney did not ask this question then the fact that the witness discussed what happened with other witnesses would never be revealed in the testimony. Therefore, an important question is whether attorneys are familiar enough with these eyewitness identification issues to ask the appropriate questions. If not, then an appropriate role for eyewitness memory experts would be assisting attorneys in questioning witnesses.

Another potential concern is that even though participants are making the correct decision on some of these issues individually that does not mean that their decision will remain the same after deliberation with other jurors. That is, if jurors cannot identify the reason why they are making their decision then they may be susceptible to the influence of others. For example, if the participants in this study were to discuss the case and reach one verdict then the participants that indicated that they found the witness to be accurate because the witness received post event information from other witnesses may discuss this incorrect information and lead others to find the witness accurate based on this information. If that is the case then an eyewitness memory expert may be needed to explain these issues to the jury so that they will be able to verbalize why

they made their decisions. Therefore if an expert was present to discuss the problem with post event information then jurors would not be affected by this incorrect information coming from other jurors.

In conclusion, the importance of assessing eyewitness memory knowledge is to determine how jurors will evaluate a flawed eyewitness account in the context of courtroom testimony. A potential advantage of using the transcripts designed for this study as a measure is that the transcripts measure eyewitness memory knowledge in a context that is much closer to what jurors would encounter in a courtroom. Furthermore, the results of this study shed light on the problem of using surveys to assess eyewitness memory knowledge since the survey responses did not predict an individual's performance on this more face valid measure.

Although surveys may be beneficial in assessing overall knowledge of eyewitness memory, in a given case, this may not be necessary. That is, for a specific case not all eyewitness memory factors will be relevant. Therefore, given the current findings, survey results may inform the court regarding which issues might be problematic for jurors but they are limited in that they don't tell which issues will be problematic for a specific juror. In addition, survey results are limited in that you can only obtain frequency information and therefore it is up to the researcher to determine where to draw the line when determining if an issue is a problem among jurors.

Therefore, in a real world setting, although the survey may be more appropriate to use when determining overall what people know about eyewitness memory, the transcripts may be a more appropriate measure to assess knowledge for the issues specific to the case at hand. Specifically survey responses did not accurately predict how a given participant would do on a particular issue and this is what would be important for a specific case. For example, in a particular case, if the only problem with an eyewitness's identification is that the witness

discussed what had happened with others prior to being interviewed then it would only be important to know what jurors know about the issue regarding post event information and not overall knowledge of eyewitness memory. Since the transcripts more accurately simulate how jurors are actually exposed to these issues, it is argued that performance on this measure is likely to be a more accurate representation of knowledge of each issue. Therefore, the measure developed for this study may be more beneficial than the survey to those conducting research for a specific case (e.g., jury simulations).

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Vita

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