Eyewitness confidence and the impact of expert testimony by a psychologist versus judge's instructions

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EYEWITNESS CONFIDENCE AND THE IMPACT OF EXPERT TESTIMONY

BY A PSYCHOLOGIST VERSUS JUDGE'S INSTRUCTIONS

BY

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The unreliability of eyewitness memory has received increasing attention during the past several years. Several studies have examined the effects of expert psychological testimony regarding eyewitness memory. However, many courts have failed to allow psychological expert testimony on the grounds that it is too costly financially, too time consuming and unduly influences the jurors. The present study represents the first attempt to replicate one of the expert psychological studies, as well as being the first to examine the effects of judge's instructions regarding psychological research on eyewitness memory.

112 subjects were randomly assigned to one of eight experimental conditions. Half of the subjects viewed a videotape of a highly confident eyewitness, while half viewed an eyewitness with low confidence. Subjects were then asked to view a videotape of a psychologist giving relevant expert testimony, a psychologist giving general expert testimony, a judge giving general instructions, or no further videotapes (control group). Subjects were then asked to complete a number of Likert-scale questions concerning the guilt or innocence of the defendant, and the subjects' basis for and confidence in their decision.

Results indicated that subjects in all conditions found the defendant innocent, thus failing to replicate the results of the previous study. On those measures in which significant differences were obtained, the three forms of expert testimony did not differ from one another, thus supporting the use of judge's instructions as a replacement for psychological expert testimony.

Results are discussed in terms of their implications for future research in expert testimony as well as implications for the legal system.
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Wall (1965) has concluded that the average juror takes as absolute proof an eyewitness' identification of a suspect. In a case cited by Wall, a jury convicted a young man of murder even though the only eyewitness had previously stated that she could not correctly identify him. Furthermore, the original description of him did not match, he was not wounded although the criminal probably was, and a taxi driver who drove the murderer to the crime area could not positively identify him either. The literature on eyewitness identification has many examples such as this, in which an innocent person is falsely identified, convicted, and even jailed before subsequent clearing evidence is uncovered.

Staged-crime research also indicates that eyewitness identifications are often unreliable. A study by Leippe, Wells, and Ostrom (1978) found that following a staged crime, 34% of the witnesses were unable to identify the criminal from a six-person photo spread, 35% falsely identified the criminal, and only 31% accurately identified him. In a similar study by Warnick and Sanders (1980), "misses" and false identifications accounted for 76.7% of all responses.
Although fairly high rates of false identification have been found in the literature, the courts often discount this evidence on the theory that inaccurate witnesses may fail more than accurate witnesses to convince the jury of the reliability of their testimony. But some research suggests that jurors rely unduly upon eyewitness testimony and that jurors may be unable to distinguish accurate from inaccurate witnesses. Loftus (1974) found that when jurors were told that there were no eyewitnesses to the robbery of a grocery store, 18% found the defendant guilty. However, when jurors were told there was a single eyewitness to the crime, 72% convicted the defendant. In a third condition, in which jurors were told that the eyewitness had not been wearing his glasses, that he had less than 20/400 vision, and that therefore, he could not possibly have seen the thief's face, 68% of the jurors still convicted the defendant. These data are consistent with Wells, Lindsay, and Ferguson (1979) who found that eyewitnesses were believed 79.8% of the time. They also found that jurors were as likely to believe an eyewitness who made a false identification as they were to believe an eyewitness who had in fact identified the actual offender.

Results such as these merit considerable attention from both psychological researchers and the judicial system.
This paper was designed to accomplish the following objectives:

(a) review psychological factors affecting eyewitness accuracy and reliability,

(b) related to (a), discuss memory processes as they relate to eyewitness performance,

(c) discuss the confidence – accuracy relationship in eyewitness testimony and juror's reliance on this relationship,

(d) review expert testimony research and research on judge's instructions and their potential for reversing some of the justice-impairing effects, and

(e) compare the effects of different types of expert testimony against a judge's instructions following an eyewitness of low or high confidence.
Factors Affecting the Accuracy of Eyewitness Testimony

The unreliability of eyewitness testimony poses one of the most serious problems in the administration of criminal justice. A number of recent books and articles by psychologists have begun to question the esteem given to eyewitness identification evidence by the justice system (Buckhout, 1974, 1976; Katz and Reid, 1977; Loftus, 1979; Warnick and Sanders, 1980; Woocher, 1977; Yarmey, 1979). Psychological research has isolated a number of factors which affect the accuracy of eyewitness testimony. Knowledge of these factors would certainly assist the juror in evaluating the credibility of eyewitness testimony in a particular situation. A discussion of all of these factors is beyond the scope of the present paper. However, twelve of the most common of these factors will be subsequently reviewed in this section. Because these are twelve of the most common and important factors affecting eyewitness identification, they have been chosen for use in the present investigation.

Crimes seldom occur under ideal observation or lighting conditions. Darkness, fast movements, and the distance from the criminal all contribute to the unreliability of
eyewitness identification (Levine and Tapp, 1973). Visual efficiency drops markedly with poor or rapidly changing lighting. In conjunction with distracting noise or other activities, the attentional capacities of an individual may become spread too thin (Lezak, 1973).

Witnesses are often asked to make identifications after only a brief observation of the criminal. Research has found that shorter observation times result in less reliable identification and recall. Loftus (1972) and Hintzman (1976) have found that picture recognition is a successively increasing function of exposure time. Laughery, et. al. (1971) found that 58% of subjects who had viewed a face for 32 seconds could correctly identify it, whereas only 47% of those who had viewed the face for 10 seconds could correctly identify it.

The effects of the psychological concept of "retroactive inhibition" have been firmly documented. Simply put, the more time between the observation of a crime and the recall of that observation, the poorer a person's memory is of that event. Egan, Pittner, and Goldstein (1977) found that the number of mistaken identifications made by eyewitnesses increased from 48% to 62% to 93% as the crime-identification interval was lengthened from 2 to 21 to 56 days. Shepard (1967) found 100% correct recognition of pictures after a two-hour delay but only 57% correct
recognition after four months. (Note that if the subject simply guessed he would have been correct 50% of the time.)

A common misconception of the judicial system is the belief that victims' or witnesses' stress will increase their ability to recall the identity of a subject. In a representative case of this phenomenon, in which a man was tortured by starting a fire at his feet, the court stated that "every peculiarity of each of the suspects must have been literally burned into the memory of both the victim and his wife" (cited in Katz and Reidy, 1977). In spite of common beliefs such as this one, the bulk of psychological research demonstrates that perceptual abilities actually decrease significantly when the observer is under stress. The Yerkes-Dodson Law, first noted in 1908, states that stress increases performance up to a point, after which performance decreases. In crimes in which the witness perceives danger to self or others, the stress involved may well be greater than the optimal level. Research has found that witnesses are less capable of remembering details, less accurate in reading dials, less certain in detecting signals, and more susceptible to suggestion under stressful circumstances (Levine and Tapp, 1973). A number of recent studies have indicated that more anxious eyewitnesses may tend to be less accurate in their testimony than non-anxious eyewitnesses (Muellar, Carlomusto, and Goldstein, 1978;
Easterbrook (1959) has shown that under high stress people concentrate more and more on a few features of their environment, with a lessening of attention to other details. Buckhout (1974) found that under stressful conditions, Air Force officers tended to be less accurate observers, fixating their eyes on the joystick and other irrelevant targets as opposed to looking at the instruments and the ground for targets. Similarly an eyewitness may spend a great deal of time concentrating on the weapon of the criminal, and much less time processing other aspects of the situation. Loftus (1979) has used the term "weapon focus" to refer to this phenomenon. In a study by Johnson and Scott (1976, cited in Loftus, 1977) one highly stressed group of observers witnessed a man run into a room in which they were sitting, carrying a bloodied letter opener. A second group witnessed a man enter the room holding a pen with grease on his hands. In the second group 49% correctly identified the man. In the first group only 33% correctly identified him.

In a study related to the phenomenon of "weapon focus", Wells and Leippe (1981) found that eyewitnesses who paid less attention to peripheral, inanimate details in the room with the thief, were more accurate in identifying the thief. However, jurors behaved as though the memory for the thief's
characteristics correlated positively with memory for peripheral trivia. That is, the jurors were more likely to believe the inaccurate witnesses who could recall peripheral details better. Accuracy in identifying the criminal is also reduced when the number of criminals increases. Clifford and Hollin (1981) found that as the number of criminals increased from one to three to five, the accuracy of the eyewitness testimony correspondingly decreased.

Loftus (1979) has suggested that testimony about an emotionally loaded incident should be treated with greater caution than testimony about a less emotional incident. This is based in large part on two studies by Clifford and his colleagues. Clifford and Scott (1978) found that for both men and women the ability to recall events was significantly worse for those who had seen a videotape of a violent event than for those who saw a nonviolent version. Clifford and Hollin (1981) found that witnesses were significantly less accurate in their testimony after viewing a woman being mugged than after viewing a woman being asked for directions.

The fact that most people have enormous difficulty estimating the duration of an event has received sufficient justification in the literature (Block, 1974; Doerhring, 1961). According to Woocher (1977) people tend to judge time by the amount of activity occurring. During a
sudden, action-packed event, such as a crime, witnesses overestimate the length of time involved because of the flurry of activity that has occurred. In addition, witnesses undergoing stress or anxiety tend to overestimate the duration of the situation even further (Filer and Meals, 1949; Langer, Wapner, and Werner, 1961; Sarason and Stoops, 1978).

Witnesses are often asked to estimate time in courts of law. However, Buckhout and his colleagues (Buckhout, 1977; Buckhout et al. 1975), studying the effects of eyewitness testimony in a realistic setting, found that witnesses who viewed an attack on a professor which actually lasted only 34 seconds, estimated the incident to average 81 seconds. Two additional studies have shown the same tendency to overestimate time. Marshall (1966) showed subjects a film lasting 42 seconds. Two weeks later the subjects were asked to estimate how long the picture had taken. On the average, witnesses estimated the film lasted a minute and a half. Johnson and Scott (1976, cited in Loftus, 1979) found that men who had viewed a person for four seconds, estimated that it had been seven seconds on the average. Women estimated that they had viewed the target an average of 25 seconds.
Another factor which affects the accuracy of eyewitness identification is the uniqueness or distinctiveness of the suspect's face. Recent research has found that high-distinctive or atypical faces are significantly better recognized than low-distinctive or typical faces (Courtois and Muellar, 1981; Going and Read, 1974).

In many eyewitness identifications, a person seen in one situation is confused or recalled as a person seen in a second situation. This phenomenon has been called "unconscious transference" by Loftus (1976) and may have occurred in the study by Buckhout (1974) in which an assault was staged upon a professor. Seven weeks after the assault, witnesses were asked to identify the assailant from a group of six photographs. 40% of the witnesses identified the right man; however, over 40% identified an innocent bystander who had been near the scene of the assault but had not committed it.

In another study of "unconscious transference" Loftus (1976) presented a story of six college students along with their photographs to a number of subjects. Only one of the photographs contained the face of the criminal. After three days the subjects were asked to identify the criminal from a set of five pictures shown them. In reality the actual criminal's photo was not included but the face of an incidental character in the story was included. Over 79% of
those subjects making a selection chose the incidental character.

Perhaps the classic example of "unconscious transference" has been presented by Wall (1965). A ticket agent in a railroad station who was held up at gunpoint, subsequently identified a sailor in a lineup as the culprit. The sailor, however, had an iron-clad alibi and was released. When questioned, the ticket agent said he identified the sailor because he looked familiar. As it turned out, the sailor had purchased tickets from this agent on three separate occasions. Apparently the witness recognized that the face was familiar, but did not remember the context in which it was familiar.

When witnesses are asked to make an identification from a lineup, a number of factors may affect the accuracy of that identification. One problem, as noted by Katz and Reid (1977), occurs when the witness has already given a description of the criminal to the police. Later when asked to identify the suspect from a lineup, the witness will look for a suspect who fits the description he/she has already given to the police. In order for a lineup to be unbiased all of the participants must resemble the initial description given by the witness. Buckhout (1976) has suggested that a fair lineup be designed such that:

(a) all items have an equal chance of being
selected by a person who did not see the suspect;
(b) the items are similar enough to each other and to the original description of the suspect to be confusing to a person who is merely guessing; and
(c) the test is conducted without leading questions or suggestions from the test-giver.
(p.84)

The importance of this final point has been shown in a number of studies in which witnesses were influenced by the subtle suggestions of the interrogator. Hall and Ostrom (1975, cited in Wells, 1978) found that telling the witnesses that the suspect "is in the lineup" led to more false identification than telling them that the suspect "may or may not" be in the lineup. Buckhout (1975) has found that the use of authority figures increases the frequency of attempted identifications, whether accurate or not. Buckhout and Friere (1975, cited in Katz and Reid, 1977) found that when police officers show witnesses a series of photographs, some of which are mug shots, the witnesses are more likely to identify one of the mug shots as the suspect. One of the most powerful ways in which police can bias eyewitness identification is with the use of the showup. In a showup, the suspect is presented singly to the witness for identification, usually in the presence of a police officer. Buckhout (1976) has suggested that the witness is more likely to cast aside doubts and simply trust the judgment of the police officer whom he subconsciously wishes to please.
or fears to disagree with.

These twelve factors have been chosen for the current study on the basis of their frequency and importance in affecting eyewitness identifications. However, they represent only a few of the many factors affecting the accuracy of eyewitness testimony. Studies have found eyewitness identification to be affected by the significance of the event observed, the physical condition and age of the observer, personal biases, prior conditioning and experience, the needs and motives of the witness, the race of the suspect, the attractiveness of the suspect, etc., ad infinitum. It is apparent that these are powerful factors which have a major impact on the accuracy of eyewitness testimony, and strongly suggest the need for expert testimony or judge's instructions to educate the juror about them.
A comprehensive review of the theory and research on memory is beyond the scope of the present paper. However, a current model of memory (Loftus and Loftus, 1980), as well as a brief overview of the stages of memory and how distortions in memory can arise, will be presented. A condensed form of this information will be presented to the subject-jurors as part of the expert testimony.

The nature of memory reflects a complex system of processes which have generally been conceptualized as consisting of three hypothetical stages: (1) sensory memory, (2) short-term memory, and (3) long-term memory (Yarmey, 1979). Sensory memory consists of the initial processing of information and is very rapid and superficial. Part of the information is selected for further processing at the next stage, short-term memory, while the rest of the information is lost quickly through decay or being bumped out of the system by new information.

Once the information enters short-term memory it is vulnerable to decay within the first thirty seconds, unless it is rehearsed for long-term storage. Generally, from 5 to 9 bits of information can be stored in short-term memory at any one time (Miller, 1956). Rehearsal of short-term memory items results in transfer to long-term memory. Long-term
memory is identified by an infinite capacity to store information over a lifetime.

From an applied perspective, the processes by which information gets into and out of memory have been broken down into three components: acquisition, retention, and retrieval (Loftus, 1979; Yarmey, 1979; Wickelgren, 1981). Acquisition (or encoding) is the process of coding physical stimuli into the memory system. Retention is the storage of the coded information in some systematic, organized way. Retrieval is the process by which the material is recalled from storage. As Loftus (1979) points out, errors in memory may result from errors made during the original perception of the event (acquisition stage), distortion of stored information by events occurring during the retention phase, or an inability to find stored information (retrieval stage).

A common and misconceived model of memory by both researchers and laymen alike has been the notion of memory as a "videotape recorder", in which events are permanently and unalterably stored (Loftus, 1980; Loftus and Loftus, 1980). In a survey of 75 psychologists and 94 laymen, Loftus and Loftus (1980) found that 84 percent of the psychologists and 69 percent of the laymen agreed with the statement that "Everything we learn is permanently stored in the mind". Typically, support for this model has come from
Penfield's brain stimulation studies and hypnotic phenomenon. Penfield (1969) reported that electrical stimulation of parts of the brain of his neurosurgical patients resulted in a re-experiencing of a forgotten event from their past. However, as Loftus and Loftus (1980) point out, spontaneous memory recall resulted in only 3.5% of Penfield's cases and even these appeared to be reconstructions or inferences rather than actual memories.

Hypnosis has also been viewed as a retrieval technique capable of reactivating detailed memories from permanent storage (Cheek and LeCron, 1968), and thus supporting the "videotape recorder" model. However, recent research has found that hypnotized subjects are more vulnerable to memory distortions caused by leading questions than non-hypnotized subjects (Putnam, 1979).

Loftus and colleagues have demonstrated in a number of studies that stored memory can be distorted by later events. She has proposed a "reconstructive" rather than a "videotape recorder" model of memory to account for these distortions. In a series of four studies, Loftus (1975, 1977, 1978) has been able to show that stored information can be altered by subsequent information. In one study, Loftus (1975) showed subjects a film of a class being disrupted by eight demonstrators. Half of the subjects were subsequently asked if the leader of the four demonstrators was male, while the
other half were asked if the leader of the twelve demonstrators was male. One week later all subjects were asked to report the number of demonstrators in the film. Those subjects who had been previously asked the "four" question reported seeing an average of 6.4 people, whereas those subjects asked the "twelve" question recalled an average of 8.9 people.

Loftus (1975) has also shown that nonexistent objects can become incorporated into people's memories. Subjects who saw a film and were later asked a question about how fast the car was traveling when it passed the barn, were compared to subjects asked the question how fast was the car traveling on the country road. Although, in fact, no barn existed, 17% of those subjects who had previously been asked the question including the word barn claimed to have seen a barn as compared to 3% of the control subjects.

The way a question is phrased may also influence stored memory. Loftus and Zanni (1975) found that when subjects were asked about nonexistent objects, the use of the word "the" or "a" made a significant difference. When asked if they had seen "the" broken headlight, 20% of the subjects responded yes as compared to 6% of the subjects who responded yes to the question "did you see "a" broken headlight?" Loftus and Palmer (1974) asked subjects to estimate the speed of a car in a film they had seen.
Subjects who were asked how fast the cars were going when they "smashed" each other estimated 40.8 mph, whereas those asked for the speed of the cars when they "hit" each other estimated 34.0 mph. This evidence of the malleable nature of stored memory has led to Loftus' support of a "reconstructive" model of memory, in which the recalled information may differ from the original stored information.

As evidenced by the above research, psychologists are becoming aware of the fact that memory is an active process that often introduces inaccuracies by adding details not present in the initial event itself. In the context of eyewitness identification, such modifications of memory could have tragic consequences. As noted earlier in the survey by Loftus and Loftus (1980) potential jurors may not be aware of the truly complex nature of memory. Some form of expert testimony or judge's instructions could have dramatic results in educating jurors as well as members of the judicial system about the fallible nature of human memory.
Confidence

The confidence of an eyewitness has become one of the most important variables in eyewitness research. A number of studies have shown that subject-jurors are as likely to believe an inaccurate eyewitness as they are to believe an accurate eyewitness (Lindsay, Wells, and Rumpel, 1981; Wells, Lindsay, and Ferguson, 1979; Wells, Lindsay, and Tousignant, 1980; Wells, Ferguson, and Lindsay, 1981). Furthermore, the confidence of the eyewitness is a primary determinant of his or her perceived credibility (Lindsay, Wells, and Rumpel, 1981; Wells, et. al., 1979; Wells, et. al., 1980). Wells, Lindsay, and Ferguson (1979) found that eyewitness confidence highly correlated (r=.71) with the subject-jurors' belief of the eyewitness. According to Wells (1980), up to 50% of the variation in jurors' decisions regarding the believability of an eyewitness can be accounted for by eyewitness' confidence. Hastie (1980, cited in Wells, et. al., 1980) videotaped jury deliberations and subjected the videotapes to an analysis in which all remarks concerning eyewitness identifications were coded by judges. He found that most jurors assumed that high confidence on the part of the witness implied accuracy.
Jurors do not stand alone in their reliance upon eyewitness confidence in evaluating witness credibility. The United States judiciary has formally designated confidence as a reliable cue to evaluating witness credibility in a major United States Supreme Court case (Neil vs. Biggers, 1972).

However, despite the reliance of both jurors and judges on eyewitness confidence, research has not found confidence and eyewitness accuracy to be very highly related. Wells, et. al. (1979) suggest that over 90% of the variance in eyewitness confidence is determined by factors other than eyewitness accuracy. Eyewitness confidence has been shown to be modestly related to accuracy (Lipton, 1977; Wells, et. al., 1979), unrelated much of the time (Leippe, Wells, and Ostram, 1978) and negatively related at times (Loftus, Miller and Burns, 1978). Deffenbacher (1980) in a review of 25 such studies, found that half of the studies noted a modest but positive correlation between confidence and accuracy, while half found correlations that were nil or negative. Deffenbacher (1980) contends that under "low optimal conditions", or those conditions which are not conducive to forming an accurate memory, the confidence-accuracy relationship is near zero. Lichenstein and Fischhoff (1977) found that there was no relationship between accuracy and confidence on a task that was novel.
However, when subjects were familiar with the task, subjects' confidence was significantly related to accuracy. Wells, et. al. (1979) argue that criminal identification typically involves a novel experience in which a single exposure is followed in time by a recognition test. They therefore, suggest that such novel encounters will lead to a poor accuracy-confidence relationship. Leippe (1980) notes that the accuracy of one's memory can be influenced by reconstructive memory processes, while confidence in one's memory can be independently influenced by suggestive social influences, such that the correspondence between confidence and accuracy can range from high to low depending on the amount of external intrusion. Deffenbacher (1980) concludes that the judicial system should cease relying on eyewitness confidence as an index of eyewitness accuracy.

In another important finding for the judicial system, Wells, et. al. (1981) found that confidence in a false memory can be easily enhanced. Half of their eyewitnesses were "briefed" in a way in which an attorney might do with his or her witness. This included a simple instruction to rehearse the witnesses' account, sample questions that might be asked by a cross examiner, and warnings that the cross-examiner will look for inconsistencies in the testimony. They found that: (a) briefed eyewitnesses were judged by subject-jurors as more confident than non-briefed
eyewitnesses; (b) there was a small confidence-accuracy correlation for non-briefed eyewitnesses, but no relationship for briefed eyewitnesses, and (c) greater belief was given to the testimony of the briefed eyewitnesses than to the non-briefed eyewitnesses and the percentages of guilty votes followed the same pattern. Briefed eyewitnesses rated themselves as more confident then did non-briefed witnesses, with the increase primarily due to inaccurate eyewitnesses increasing their confidence.

Techniques such as these are common in the legal system and, in fact, are openly advocated. A recent film for law enforcement officers is solely devoted to the importance of thorough witness preparation (Anderson, 1979, cited in Wells, et. al., 1981). These techniques may increase the confidence of inaccurate eyewitnesses with a subsequent effect of jurors overbelieving inaccurate eyewitnesses (as was noted in the Wells, et. al., 1981 study).

The recent evidence that jurors are strongly influenced by witness confidence and that confidence does not correspond with accuracy suggests a serious problem for the judicial system. These problems may be overcome by the use of expert witnesses or a standardized information package to be presented to jurors by the judge.
Effects of Expert Testimony

Four studies have thus far examined the effects of expert psychological testimony on jurors' decision (Hosch, Beck, and McIntyre, 1980; Loftus, 1980b; Wells, et. al., 1980; Fox (Note 1)). All four studies have found that subject-jurors are significantly influenced by expert psychological testimony regarding eyewitness identification.

Loftus (1980b) conducted two experiments in which written summaries of an assault case were presented to subject-jurors. Half of the subjects' summaries included expert psychological testimony, while half did not. She found that the expert testimony reduced the percentage of guilty verdicts from 57.5% to 39%. In her second study, six-person juries deliberated together to reach a verdict. She found that juries whose summaries included expert testimony convicted the defendant less frequently and spent much more time discussing the eyewitness accounts than did those juries whose summaries did not.

Hosch, Beck and McIntyre (1980) studied the effects of expert testimony on both community residents and college student juries. In the first phase of their experiment, 24 community residents served as jurors. The jurors were led to believe that the case was real and all procedures were made as realistic as possible. During the second phase of
the experiment 24 student jurors viewed a videotape of the
same court-proceedings. All subjects viewed a burglary case
in which the eyewitness identified the defendant as the
criminal. Subsequently half of the subjects in each sample
heard the expert testimony of a psychologist. Subjects who
heard the expert testimony placed less importance on the
eyewitness testimony in reaching their verdict, and spent
more time in scrutinizing all evidence presented in the
case. No significant differences were found between the
community-resident juries and the college-student juries
viewing the videotape.

Wells, Lindsay, and Tousignant (1980) presented
videotaped expert testimony to half of their subjects prior
to their viewing of a videotaped cross-examination of an
eyewitness. The eyewitnesses had previously seen a staged
theft under poor, moderate, or good witnessing conditions
and had been asked to make an identification. Subject-jurors viewed cross examinations of witnesses who
were either accurate or inaccurate. Expert testimony
reduced subjects' belief of accurate witnesses by 18% and
inaccurate witnesses by 24%.

There is considerable agreement among psychologists in
this area that expert testimony should not be directed
toward the credibility of the particular eyewitness, but
focused on providing knowledge of scientific results which.
the jurors should consider in weighing eyewitness testimony (Loftus, 1980b; Hosch, Beck, and McIntyre, 1980; Wells, Lindsay and Tousignant, 1980; Woocher, 1977). It is generally agreed that psychologists should not offer post hoc probabilities of the likelihood that a witness was accurate in a particular case. However, there has been some disagreement over how relevant the scientific information presented by the expert testimony should be to the particular case. Woocher (1977) has argued that expert psychological testimony can furnish jurors with the scientific information needed for a proper evaluation of the identification evidence by responding to the particular facts of a case. Both the Loftus (1980b) and Hosch et. al. (1980) studies followed this advice. In the Loftus (1980b) study, the expert testified on the relevant factors of cross-racial identification, stress, weapon focus, and alcohol. Hosch et. al. (1980) had the expert testify on the relevant factors of duration of the critical event, stress, and his opinion to a hypothetical question based on the facts in this case. Wells, et. al. (1980), on the other hand, has argued on behalf of a more general form of expert testimony, stating that specific or "relevant" testimony is too costly in terms of time and money. In the Wells, et. al. (1980) study the expert testimony consisted of the two general points that 15% - 85% of eyewitnesses may choose the wrong person from a lineup and that eyewitness
confidence is an unreliable cue to an eyewitness' accuracy.

The only study to compare a more specific "relevant factors" expert testimony with a "general" expert testimony was done by Fox (Note 1). It is also the only study to manipulate the eyewitness confidence variable. Fox found that both types of expert testimony significantly reduced guilt ratings and the belief that the eyewitness correctly identified the gunman. He found that "relevant" testimony reduced guilt ratings and the belief that the eyewitness correctly identified the gunman more than "general" expert testimony, although the differences did not attain statistical significance. Fox also found that both types of expert testimony significantly reduced subject-jurors' reliance upon eyewitness confidence as an indicator of accuracy, though it did not completely eliminate the tendency for subjects to believe the high confidence witness more than the low confidence witness.

It is apparent from the above studies that both "relevant" and "general" expert testimony can have a significant effect upon jurors' beliefs about the reliability and accuracy of eyewitness testimony.
Expert Psychological Testimony vs. Judge's Instructions

Although the previously cited studies have shown expert psychological testimony to be effective in reducing jurors' overreliance upon eyewitness identifications, the courts have often rejected such testimony. They cite the fear that the expert's impressive credentials may lead the jury to rely too heavily upon his opinion and to undervalue the weight of eyewitness testimony. They also contend that expert testimony can be quite costly financially as well as causing undue delay due to the presentation of extensive and merely cumulative evidence (Woocher, 1977). In order to correct against these arguments, it has been suggested that the court give special cautionary instructions concerning eyewitness testimony to the jury in cases in which eyewitness identifications are used. However, no study to date has examined the effects of instructions read to the jury by the judge concerning the unreliability of eyewitness identifications.

Several courts have adopted model jury instructions. The leading decision in this area has been United States v. Telfaire, 1972, in which instructions designed to focus the jury's attention on the identification issue were set forth. Although model instructions such as these have been hailed as a step in the right direction, they have been criticized as failing to provide the jury with information it can use.
Another criticism of special jury instructions has been the contention that the jury does not use information conveyed in such a manner. Although, as previously stated, no study has yet been done which examines the effectiveness of jury instructions concerning eyewitness identifications, there have been a number of studies done examining the effectiveness of other jury instructions. One study (Charrow and Charrow, 1978, cited in Loftus, 1979) found that judge's instructions tend to be long and tedious and are not adequately comprehended. In a study by Thompson, Fong, and Rosenhan (1981), it was concluded that jurors tend to decide cases according to their own standards of justice and are not much influenced by what the judge says. Critics contend that instructions are embedded in the middle of a long and difficult list of instructions in language that is generally foreign to the layperson and juror.

The present study will compare the effects of judge's instructions to psychological expert testimony and to a "no expert testimony" control condition following an eyewitness with either high or low confidence. The judge's instructions will only be in the realm of "general" expert testimony for two reasons. First, judges are not experts on the capacity of eyewitnesses and second, they are not supposed to comment upon the evidence itself, which they
might be forced to do if they give "relevant" expert testimony. In order to make the judge's instructions more viable and equivalent to the psychological expert testimony, the judge's instructions concerning eyewitness identifications will be the only instructions heard on the videotape containing the judge. As was done in the Fox (Note 1), Loftus (1980b), and Hosch et. al. (1980) studies, the expert testimony will be presented following the eyewitness testimony, as this is the procedure commonly followed in the courtroom.

It has been argued that judge's instructions may be as effective as "general" expert testimony by a psychologist, but not as effective as "relevant" expert testimony because with "relevant" expert testimony the psychologist can respond to the particular facts of a case and furnish the jurors with the particular scientific information needed for a proper evaluation of the identification evidence. Therefore, the present study will compare judge's instructions to both "general" and "relevant" expert psychological testimony.

The goals of the present study are to determine if judge's instructions are as effective as psychological expert testimony, and to replicate a previous expert testimony study. These are significant goals because
replication will increase the reliability and generalizability of the results of the previous expert testimony research. In addition, if the judge's instructions are found to be as effective as the psychological expert testimony, tremendous amounts of time and money can be saved in the legal system.

The eyewitness videotape and the psychologist videotapes will be the same as those used by Fox (Note 1) in his study. These tapes have been previously rated by subjects as highly realistic, and will constitute the first replication of an expert testimony study. This will also be the first study to compare judge's instructions with expert psychological testimony. While it has been argued that a psychologist's impressive credentials may lead the jury to rely too heavily upon his opinion, others have argued that due to the public reaction to trials such as John Hinckley's, the possibility arises that the jury may discount the testimony of the expert for the very reason that he is a psychologist (Woocher, 1977). It is hypothesized by the author that the psychological expert testimony will replicate the results found by Fox (Note 1), and in addition, that the judge's instructions will have as much impact on subject-juror's decisions as the "general" psychological testimony but not as much impact as the "relevant" testimony.
CHAPTER III

METHODS

Design

The experimental conditions represent a 2 x 4 factorial design. The factor of "eyewitness confidence" during testimony consisted of two levels (high confidence vs. low confidence). The "expert testimony " variable had four levels (no expert testimony (control) condition, relevant factors expert testimony by a psychologist, general factors expert testimony by a psychologist, and general expert testimony by a judge). Subjects were randomly assigned to one of the 8 conditions, with the constraint that at least 14 subjects (8 female, 6 male) were assigned to each experimental condition.

Subjects

112 subjects (64 females, 48 males) were selected from the University of Montana introductory psychology class. Each subject received experimental credit for his/her participation in the study.
Eyewitness Testimony Videotapes

Common Characteristics of Eyewitness Videotapes

The two eyewitness videotapes were the same as those used by Fox (Note 1). Both tapes concerned the robbery of a 7-11 convenience store and the subsequent murder of a store clerk (See Appendices A and B). The eyewitness to the crime was the 7-11 store manager who was working in the back of the store when he heard a gunshot. Upon running to the front of the store he found two men emptying the cash register, another holding a gun, and his fellow employee lying on the floor. The gunman called to the other men to get out of the store and then took a shot at the witness which narrowly missed. The criminals ran down the street to a car parked out of sight. The eyewitness checked on the murdered clerk and then called the police and gave them a description of the crime and the gunman. One month later the eyewitness identified the defendant as the gunman in a one-on-one "showup" identification at police headquarters.

In both videotapes the eyewitness was initially interrogated by the prosecution. The prosecution questions were relatively simple and straightforward. Following the prosecution's questioning, the eyewitness was interrogated by the defense lawyer. The defense lawyer's questions were more challenging and confrontive and required the eyewitness
to describe the crime in more explicit detail.
Low Confidence Videotape (See Appendix, Section A)

In the low confidence videotape, the eyewitness was hesitant, unsure, and inconsistent in his testimony. The witness used a high number of verbal qualifiers ("I think......", "I guess......", "It must have been.......") which have been shown to portray low confidence (Wells and Lindsay, 1982). The script for this videotape was also written to include frequent hesitation forms ("uh", "well", "you know") and questioning forms (the use of rising, questioning intonation in declarative contexts) which have been shown to produce a "powerless" speech style (Erickson, Lind, Johnson, and O'Barr, 1978).

High Confidence Videotape (See Appendix, Section B)

In the high confidence videotape, the eyewitness (portrayed by the same actor as in the low confidence videotape) was consistent, sure of himself and non-hesitant. He did not use verbal qualifiers, but instead expressed his confidence in his identification of the gunman by using phrases such as "I'm certain", "I'm sure", and "I could never forget".
Expert Testimony Videotapes

General Expert Testimony by a Psychologist (See Appendix, Section C)

This tape was the same as that used in the Fox (Note 1) study and was adopted from Wells, Lindsay, and Tousignant (1980). The first half of the psychologist's testimony was in response to questioning by the defense lawyer, while the second half was in response to the prosecution's questions. Like the Wells, et. al. study (1980), two major points were made. The first general point was that eyewitness identification in criminal cases is different from recognizing one's friends, where repeated exposures serve to facilitate memory. Research using staged crimes has shown that, depending on the conditions, anywhere from 15% to 85% of the witnesses may choose a wrong person from a lineup. The second major point was that there is considerable evidence to show that the confidence of an eyewitness may have little or no relationship to the accuracy of the witness. Additionally, basic memory processes and types of memory were discussed by the psychologist to aid the jurors in understanding how errors in eyewitness memory may occur. Finally, as in the Wells, et. al. study (1980), the expert summarized the above points and recommended that the juror focus on situational factors that may have facilitated or inhibited the accuracy of the eyewitness.
Relevant Factors Expert Testimony by a Psychologist (See Appendix, Section D)

This videotape was again the same as used by Fox (Note 1) in his study. In this tape the psychologist discussed 12 specific factors affecting eyewitness perception and memory that were highly relevant to the case being tried. These 12 factors consisted of the following:

1. "Physical" factors affecting eyewitness performance, such as lighting conditions, fast movements and the distance from the criminal,

2. Length of observation of the criminal,

3. Length of time between observation of a crime and the recall of that observation,

4. Effects of stress,

5. Tendency of an eyewitness to overestimate the duration of a crime,

6. "Weapon focus" - the distracting effects of the presence of a weapon,

7. Number of criminals involved,
8. Effects of a violent or emotionally loaded incident,

9. Uniqueness or distinctiveness of criminal's face,

10. "Unconscious transference" - a person seen in one situation is confused with or recalled as a person seen in a second situation,

11. Effects of a biased or "showup" lineup, and

12. Effects of police pressure on eyewitnesses.

Similar to the general expert testimony, the psychologist was first interrogated by the defense lawyer, followed by questions from the prosecution. The psychologist ended by summarizing the points made in the general testimony (except for the general discussion of memory) and by reviewing the 12 relevant factors listed above.
Judge's Instructions (See Appendix, Section E)

This tape was very similar to the general expert testimony by a psychologist videotape. The same actor who portrayed the psychologist portrayed the judge. One major difference between the two videotapes, besides the judge- psychologist differential, was the fact that the judge read his testimony in the form of instructions. He was not questioned by either the defense or prosecution as the psychologist was. Otherwise, the tapes were very similar, and all of the points covered by the psychologist in the general expert testimony videotape were stated by the judge.
Dependent Measures (See Appendix, Section F)

Fourteen questions were employed as dependent measures. Subjects were first asked to indicate whether they believed the witness identified the actual gunman or an innocent person (Wells, Ferguson, and Lindsay, 1981). Subjects were subsequently asked to indicate (a) how confident they were of that decision on a 10-point Likert scale; (b) how confident they thought the witness was in his ability to identify the gunman; (c) what percentage of people they would expect to make a correct identification under the circumstances described by the eyewitness; and (d) to what extent they believed they could generally tell from a witness' confidence in his testimony whether or not the eyewitness made an accurate identification (Wells, Lindsay, and Ferguson, 1979). The probability of the defendant's guilt was also rated on a 10-point Likert scale. Subjects were also asked to rate on Likert-type scales the percentage of eyewitness testimony in general they thought was accurate (Hosch, Beck, and McIntyre, 1980). Three additional 10-point Likert scale questions, adapted from Fox, 1982, asked subjects to assess how much they relied upon the eyewitness' description of the crime, the eyewitness' confidence, and the psychologist's or judge's expert testimony in deciding whether they thought the eyewitness had identified the gunman or an innocent person. (The
question regarding expert testimony was not given to the two control conditions.) Two final Likert-scale questions asked subjects to rate the realism of the eyewitness videotape and the expert testimony videotape. (Again control subjects did not receive questions concerning the expert testimony videotape.) Subjects in the expert testimony by judge conditions were asked if they recognized the judge. Finally, in another question from Fox, 1982, subjects were asked to describe in their own words how they decided that the eyewitness had identified the gunman or an innocent person.
Procedure

Subjects were randomly assigned to one of the eight experimental conditions at the time of the initial contact. Sessions were conducted at the Clinical Psychology Center at the University of Montana, with 14 subjects (8 female, 6 male) assigned to each of the sessions. Each session was conducted by an undergraduate student in psychology who was blind to experimental hypotheses. Subjects first received a written introduction to the eyewitness videotape (See Appendix, Section G) stating the purpose of the study, general facts concerning the crime being tried, and important points made by the defendant who had testified previously. After subjects completed reading this brief introduction, they viewed one of the eyewitness testimony videotapes. Subjects in the two control conditions completed a cover sheet (age, sex, year in college) and the dependent measures following the eyewitness testimony videotape, since this videotape was the only one they saw. Participants in the expert testimony conditions were given, additionally, a written introduction to the expert testimony videotape (See Appendix, Sections H and I) describing the experience and expertise of the judge or testifying psychologist, depending upon which condition they were in. They then viewed this second videotape, after which they completed the cover sheet and the dependent measures. Each
group of subjects was debriefed by the author at the completion of the experiment and thanked for their cooperation.
Data Analysis

The Ullrich-Pitts computer program was used to compute analyses of variance. Analysis of variance were performed on the thirteen dependent measures employing Likert-type scales. If significant main effects were found for the expert testimony factor or if significant interaction effects were found, Newman-Keuls tests were subsequently performed, allowing for pairwise-comparisons among the cells. For the single dichotomous question, the gunman vs. innocent person decision, the chi-square test was performed. If significant results were found for the levels of expert testimony factor, then Bonferroni tests, which allow comparisons among individual cells involved in the chi-square test, were subsequently performed.
CHAPTER IV
RESULTS

Gunman vs. Innocent Person Decision

The percentage of subjects in each condition who believed the eyewitness accurately identified the gunman is portrayed in Table 1. 7.1% of the subjects in the control conditions believed the eyewitness accurately chose the gunman, as compared to 7.1% of the subjects who heard the relevant psychological testimony, 21.4% of the subjects who heard the general psychological testimony, and 21.4% of the subjects who heard the judge's instructions. Thus, the majority of subjects in all conditions believed the eyewitness identified an innocent person. 12.5% of the subjects who viewed the high confident eyewitness believed the eyewitness accurately identified the gunman, compared to 16% of the subjects who viewed the low confident eyewitness. No significant differences were found among any of the cells.
Table 1  Percentage of Subjects in Each Condition Who Believed the Eyewitness Accurately Chose the Gunman  (n = 14 in each cell)

<table>
<thead>
<tr>
<th>Condition</th>
<th>High Confidence Eyewitness</th>
<th>Low Confidence Eyewitness</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Expert Testimony</td>
<td>7.1%</td>
<td>7.1%</td>
</tr>
<tr>
<td>Relevant Expert Testimony</td>
<td>0.0%</td>
<td>14.3%</td>
</tr>
<tr>
<td>General Expert Testimony</td>
<td>14.3%</td>
<td>28.6%</td>
</tr>
<tr>
<td>Judge's Instructions</td>
<td>28.6%</td>
<td>14.3%</td>
</tr>
</tbody>
</table>
**Decision Confidence**

Subjects were asked to rate their confidence in their decision as to whether the eyewitness identified the gunman or an innocent person. Mean scores on a 10-point Likert scale for each of the eight individual groups are portrayed in Table 2. The higher the score, the greater the confidence indicated. The control groups' average confidence rating was 6.07, while the relevant expert testimony groups averaged 6.11, the general expert testimony groups averaged 6.11, and the judge's instructions groups averaged 6.29. The subjects in the high confidence conditions reported mean confidence ratings of 6.48, while subjects in the low confidence groups reported average ratings of 6.14. A 2 x 4 (eyewitness confidence by expert testimony) analysis of variance revealed no significant differences among the cells. (See Table 3 for the anova.)
Table 2 Means for each group on subjects' 10-point Likert scale ratings of their confidence in their gunman vs. innocent person decision. (10 = absolutely confident)

<table>
<thead>
<tr>
<th>Source of Sum of</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence (CF)</td>
<td>3.22</td>
<td>1</td>
<td>3.22</td>
<td>.32</td>
</tr>
<tr>
<td>Expert Testimony (ET)</td>
<td>9.09</td>
<td>3</td>
<td>3.03</td>
<td>.73</td>
</tr>
<tr>
<td>CF X ET</td>
<td>5.38</td>
<td>3</td>
<td>1.79</td>
<td>.46</td>
</tr>
<tr>
<td>Residual</td>
<td>406.38</td>
<td>104</td>
<td>3.91</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>424.06</td>
<td>111</td>
<td>3.32</td>
<td></td>
</tr>
</tbody>
</table>
Guilt

Subjects were asked to rate the probability of the defendant's guilt on a 10-point Likert scale (10 = definitely guilty). Mean scores for each group are shown in Table 4. Subjects in the control groups gave average guilt ratings of 4.14, while those in the relevant expert testimony groups averaged 3.75, those in the general expert testimony groups averaged 4.32, and those who heard the judge's instructions averaged 3.72. Mean guilt rating scores for those subjects in the high confidence condition were 3.91, compared to mean scores of 4.05 for subjects in the low confidence conditions. A 2 x 4 (eyewitness confidence by expert testimony) analysis of variance found no significant differences among the cells. (See Table 5 for the anova.)
### Table 4
Mean for each group on subjects' 10-point Likert scale ratings of the probability of the defendant's guilt (10 = definitely guilty)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>High Confidence Eyewitness</th>
<th>Low Confidence Eyewitness</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Expert Testimony (Control)</td>
<td>4.14</td>
<td>4.14</td>
</tr>
<tr>
<td>Relevant Psy. Expert Testimony</td>
<td>3.50</td>
<td>4.00</td>
</tr>
<tr>
<td>General Psy. Expert Testimony</td>
<td>4.14</td>
<td>4.50</td>
</tr>
<tr>
<td>Judge's Instructions</td>
<td>3.86</td>
<td>3.57</td>
</tr>
</tbody>
</table>

### Table 5
2 x 4 Analysis of variance of ratings of probability of defendant's guilt

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence (CF)</td>
<td>.57</td>
<td>1</td>
<td>.57</td>
<td>.18</td>
<td>.57</td>
</tr>
<tr>
<td>Expert Testimony (ET)</td>
<td>7.46</td>
<td>3</td>
<td>2.49</td>
<td>.82</td>
<td>.49</td>
</tr>
<tr>
<td>CF X ET</td>
<td>2.54</td>
<td>3</td>
<td>.88</td>
<td>.29</td>
<td>.33</td>
</tr>
<tr>
<td>Residual</td>
<td>315.29</td>
<td>104</td>
<td>3.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>325.96</td>
<td>111</td>
<td>2.94</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Manipulation Check ———— Eyewitness Confidence Ratings

Subjects were asked to indicate on a 10-point Likert scale how confident the eyewitness was in his ability to identify the gunman (10 = definitely confident). Mean scores for each group are displayed in Table 6. The eyewitness was rated as significantly more confident in the high confidence conditions ($X = 9.25, n = 56$) than in the low confidence conditions ($X = 4.54, n = 56$). A $2 \times 4$ (eyewitness confidence by expert testimony) analysis of variance revealed a significant main effect for confidence, as expected $F(1, 104) = 139.99, p<.001$. (See Table 7 for the anova.)
Table 6  Means for each group on subjects' 10-point Likert scale ratings of the degree of confidence of the eyewitness (10 = definitely confident)

<table>
<thead>
<tr>
<th>Eyewitness Type</th>
<th>High Confidence</th>
<th>Low Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Expert Testimony (Control)</td>
<td>9.71</td>
<td>3.64</td>
</tr>
<tr>
<td>Relevant Psy. Expert Testimony</td>
<td>8.57</td>
<td>5.00</td>
</tr>
<tr>
<td>General Psy. Expert Testimony</td>
<td>9.36</td>
<td>5.07</td>
</tr>
<tr>
<td>Judge's Instructions</td>
<td>9.36</td>
<td>4.43</td>
</tr>
</tbody>
</table>

Table 7  2 x 4 Analysis of variance of eyewitness confidence ratings

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence (CF)</td>
<td>622.29</td>
<td>1</td>
<td>622.29</td>
<td>139.99</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Expert Testimony (ET)</td>
<td>4.50</td>
<td>3</td>
<td>1.50</td>
<td>.34</td>
<td>.30</td>
</tr>
<tr>
<td>CF X ET</td>
<td>23.64</td>
<td>3</td>
<td>7.89</td>
<td>1.77</td>
<td>.16</td>
</tr>
<tr>
<td>Residual</td>
<td>462.29</td>
<td>104</td>
<td>4.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1112.71</td>
<td>111</td>
<td>10.02</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Estimated General Percentage of Correct Identifications

Subjects were asked to make Likert-type estimations of the percentage of people who would make a correct identification under the circumstances described by the eyewitness. (See Table 8 for the means of the 8 individual groups.) Subjects in the high confidence condition estimated that 31% of the population would make a correct identification under the given circumstances, as compared to an estimate of 30% in the low confidence conditions. A 2 x 4 (eyewitness confidence by expert testimony) analysis of variance found a significant main effect for expert testimony, $F(3, 104) = 3.26, p = .02$. (See Table 9 for the anova.) Subsequent Neuman-Keuls pairwise comparisons found that the control groups' estimated percentage ($\bar{X} = 40\%, n=28$) was significantly greater ($p<.05$) than estimated percentages in relevant expert testimony groups ($\bar{X} = 26\%, n=28$), general expert testimony groups ($\bar{X} = 27\%, n=28$), or judge's instructions groups ($\bar{X} = 29\%, n=28$).
Table 8  Means for each group on subjects' Likert-type estimations of the percentage of people who would make a correct identification under the circumstances described by the eyewitness

<table>
<thead>
<tr>
<th>Eyewitness</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Expert Testimony (Control)</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>Relevant Psy. Expert Testimony</td>
<td>26%</td>
<td>26%</td>
</tr>
<tr>
<td>General Psy. Expert Testimony</td>
<td>29%</td>
<td>25%</td>
</tr>
<tr>
<td>Judge's Instructions</td>
<td>29%</td>
<td>29%</td>
</tr>
</tbody>
</table>

Table 9  2 x 4 Analysis of variance of estimated general percentage of correct identifications

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence (CF)</td>
<td>14.29</td>
<td>1</td>
<td>14.29</td>
<td>.04</td>
<td>.34</td>
</tr>
<tr>
<td>Expert Testimony (ET)</td>
<td>3446.43</td>
<td>3</td>
<td>1148.81</td>
<td>3.25</td>
<td>.02*</td>
</tr>
<tr>
<td>CF X ET</td>
<td>78.57</td>
<td>3</td>
<td>26.19</td>
<td>.07</td>
<td>.37</td>
</tr>
<tr>
<td>Residual</td>
<td>36623.57</td>
<td>104</td>
<td>352.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>40167.86</td>
<td>111</td>
<td>361.37</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Belief in Eyewitness Confidence as an Indicator of Accuracy

Subjects were asked to indicate on a 10-point Likert scale to what extent you can tell from an eyewitness' confidence in his testimony whether or not the eyewitness made an accurate identification (10 = can almost always tell). Subjects in the high confidence conditions reported mean ratings of 4.14, while those in the low confidence conditions reported average ratings of 4.50. (See Table 10 for the means of the 8 individual groups). A 2 x 4 analysis of variance (eyewitness confidence by expert testimony) revealed a significant main effect for expert testimony, $F(3, 104) = 3.56$, $p=.02$. (See Table 11 for the anova.) A Neuman-Keuls analysis of this main effect indicated that the control groups gave significantly higher ($p<.05$) ratings to the belief that one can use confidence as an indicator of accuracy ($\bar{X}=5.35$, $n=28$) than subjects in the relevant expert testimony groups ($\bar{X}=3.92$, $n=28$), general expert testimony groups ($\bar{X}=3.78$, $n=28$), and judge's instructions groups ($\bar{X}=4.21$, $n=28$).
Table 10  Means for each group on subjects' 10-point Likert scale ratings of the extent to which eyewitness confidence can be used to indicate eyewitness accuracy (10 = can almost always use confidence to predict accuracy)

<table>
<thead>
<tr>
<th></th>
<th>High Confidence Eyewitness</th>
<th>Low Confidence Eyewitness</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Expert Testimony (Control)</td>
<td>5.14</td>
<td>5.57</td>
</tr>
<tr>
<td>Relevant Psy. Expert Testimony</td>
<td>3.64</td>
<td>4.21</td>
</tr>
<tr>
<td>General Psy. Expert Testimony</td>
<td>3.43</td>
<td>4.14</td>
</tr>
<tr>
<td>Judge's Instructions</td>
<td>4.36</td>
<td>4.07</td>
</tr>
</tbody>
</table>

Table 11  2 x 4 Analysis of variance of belief in eyewitness confidence as indicator of accuracy

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence (CF)</td>
<td>3.57</td>
<td>1</td>
<td>3.57</td>
<td>.39</td>
<td>.55</td>
</tr>
<tr>
<td>Expert Testimony (ET)</td>
<td>42.71</td>
<td>3</td>
<td>14.24</td>
<td>3.56</td>
<td>.02***</td>
</tr>
<tr>
<td>CF X ET</td>
<td>4.14</td>
<td>3</td>
<td>1.38</td>
<td>.35</td>
<td>.30</td>
</tr>
<tr>
<td>Residual</td>
<td>416.00</td>
<td>104</td>
<td>4.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>466.43</td>
<td>111</td>
<td>4.20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Estimated General Percentage of Accurate Eyewitness Testimony

Subjects were asked to make Likert-type estimations of the general percentage of eyewitness testimony that is accurate. (See Table 12 for the means of the 8 individual groups). Subjects in the control conditions estimated that 47% of eyewitness testimony is accurate, as compared to estimates of 43% in the relevant expert testimony groups, 35% in the general expert testimony groups, and 45% in the judge's instructions groups. Subjects in the high confidence conditions indicated average estimates of 43.75%, while those in the low confidence conditions gave average estimates of 41.25%. A 2 x 4 (eyewitness confidence by expert testimony) analysis of variance found no significant differences among the cells. (See Table 13 for the anova.)
Table 12  Means for each group on subjects’ Likert-type estimations of the general percentage of accurate eyewitness testimony

<table>
<thead>
<tr>
<th>Group</th>
<th>High Confidence Eyewitness</th>
<th>Low Confidence Eyewitness</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Expert Testimony (Control)</td>
<td>50%</td>
<td>44%</td>
</tr>
<tr>
<td>Relevant Psy. Expert Testimony</td>
<td>46%</td>
<td>41%</td>
</tr>
<tr>
<td>General Psy. Expert Testimony</td>
<td>34%</td>
<td>36%</td>
</tr>
<tr>
<td>Judge’s Instructions</td>
<td>46%</td>
<td>44%</td>
</tr>
</tbody>
</table>

Table 13  2 x 4 Analysis of variance of estimated general percentage of accurate eyewitness testimony

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence (CF)</td>
<td>150.89</td>
<td>1</td>
<td>150.89</td>
<td>.38</td>
<td>.54</td>
</tr>
<tr>
<td>Expert Testimony (ET)</td>
<td>2266.96</td>
<td>3</td>
<td>755.66</td>
<td>1.92</td>
<td>.13</td>
</tr>
<tr>
<td>CF X ET</td>
<td>231.25</td>
<td>3</td>
<td>77.08</td>
<td>.20</td>
<td>.30</td>
</tr>
<tr>
<td>Residual</td>
<td>40992.36</td>
<td>104</td>
<td>394.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>43641.96</td>
<td>111</td>
<td>393.17</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Eyewitness' Description of the Crime as Basis of Decision

Subjects were asked to indicate on a 10-point Likert scale how much they based their gunman vs. innocent person decision upon the eyewitness' description of the crime (10 = based decision largely upon eyewitness' description of the crime). Mean scores for each group are displayed in Table 14. Subjects in the control groups gave an average basis of decision rating of 6.75, as compared to average ratings of 5.28 for the relevant expert testimony groups, 5.53 for the general expert testimony groups, and 6.28 for the judge's instructions groups. Mean basis of decision ratings for those subjects in the high confidence conditions were 5.89, compared to mean scores of 6.04 for subjects in the low confidence conditions. A 2 x 4 (eyewitness confidence by expert testimony) analysis of variance revealed a significant main effect for expert testimony, $F_{(3,104)} = 2.75, \ p=.046$. (See Table 15 for the anova.) Subsequent Neuman-Keuls analysis revealed no significant differences among any of the pairwise comparisons.
Table 14 Means for each group on subjects' 10-point Likert scale ratings of how much they based their gunman vs. innocent person decision upon the eyewitness' description of the crime (10 = based decision largely upon eyewitness' description of the crime)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence (CF)</td>
<td>.57</td>
<td>1</td>
<td>.57</td>
<td>.12</td>
<td>.73</td>
</tr>
<tr>
<td>Relevant Psy. Expert Testimony</td>
<td>38.21</td>
<td>3</td>
<td>12.74</td>
<td>2.75</td>
<td>.12</td>
</tr>
<tr>
<td>General Psy. Expert Testimony</td>
<td>38.21</td>
<td>3</td>
<td>12.74</td>
<td>2.75</td>
<td>.12</td>
</tr>
<tr>
<td>Judge's Instructions</td>
<td>5.36</td>
<td>3</td>
<td>1.79</td>
<td>.39</td>
<td>.58</td>
</tr>
<tr>
<td>Residual</td>
<td>451.71</td>
<td>104</td>
<td>4.53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>525.86</td>
<td>111</td>
<td>1.74</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Eyewitness' Confidence as Basis of Decision

Subjects were asked to indicate on a 10-point Likert scale how much they based their gunman vs. innocent person decision upon the eyewitness' confidence in his testimony (10 = based decision largely upon the eyewitness' confidence). A 2 x 4 (eyewitness confidence by expert testimony) analysis of variance revealed a significant main effect for confidence, $F(1, 104) = 13.55, p<.001$. (See Table 16 for the means of the 8 individual groups and Table 17 for the anova.) Subjects in the low confidence conditions reported basing their gunman vs. innocent person decision upon eyewitness confidence significantly more ($\bar{X}=5.55$, $n=56$) than subjects in the high confidence conditions ($\bar{X}=4.02$, $n=56$).

The main effect for expert testimony was also significant, $F(3, 104) = 6.76, p<.001$. Subsequent Neuman-Keuls comparisons indicated that this effect was due to the control groups basing their decision upon the eyewitness' confidence significantly more ($p<.05$) ($\bar{X}=6.21$, $n=28$) than relevant expert testimony groups ($\bar{X}=3.86$, $n=28$), general expert testimony groups ($\bar{X}=4.04$, $n=28$), or judge's instructions groups ($\bar{X}=5.04$, $n=28$).
Table 16  Means for each group on subjects' 10-point Likert scale ratings of how much they based their gunman vs. innocent person decision upon the eyewitness' confidence in his testimony (10 = based decision largely upon the eyewitness' confidence)

<table>
<thead>
<tr>
<th></th>
<th>High Confidence Eyewitness</th>
<th>Low Confidence Eyewitness</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Expert Testimony (Control)</td>
<td>4.71</td>
<td>7.71</td>
</tr>
<tr>
<td>Relevant Psy. Expert Testimony</td>
<td>3.14</td>
<td>4.57</td>
</tr>
<tr>
<td>General Psy. Expert Testimony</td>
<td>3.79</td>
<td>4.29</td>
</tr>
<tr>
<td>Judge's Instructions.</td>
<td>4.43</td>
<td>5.64</td>
</tr>
</tbody>
</table>

Table 17  2 x 4 Analysis of variance of eyewitness confidence as basis of decision

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence (CF)</td>
<td>66.04</td>
<td>1</td>
<td>66.04</td>
<td>13.55</td>
<td>&lt;.001***</td>
</tr>
<tr>
<td>Expert Testimony (ET)</td>
<td>98.79</td>
<td>3</td>
<td>32.93</td>
<td>6.76</td>
<td>&lt;.001***</td>
</tr>
<tr>
<td>CF X ET</td>
<td>23.32</td>
<td>3</td>
<td>7.77</td>
<td>1.50</td>
<td>.29</td>
</tr>
<tr>
<td>Residual</td>
<td>506.71</td>
<td>104</td>
<td>4.37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>594.86</td>
<td>111</td>
<td>5.25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Realism Ratings of Eyewitness Testimony

Subjects were asked to rate their agreement on a 10-point Likert scale with the statement, "The film presented a realistic example of an eyewitness testimony." (10 = strongly agree) Mean realism ratings were adequately high across all groups (overall mean = 7.29, n=112) and are displayed in Table 18. A 2 x 4 (eyewitness confidence by expert testimony) analysis of variance of subjects' ratings of realism revealed no significant differences among any of the cells. (See Table 19 for the anova.)
Table 13  Means for each group on subjects' 10-point Likert scale ratings of their agreement with the statement that the film presented a realistic example of an eyewitness testimony (10 = strongly agree)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance df F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence (CF)</td>
<td>10.94</td>
<td>1</td>
<td>10.94</td>
<td>2.57</td>
<td>.108</td>
</tr>
<tr>
<td>Expert Testimony (ET)</td>
<td>10.81</td>
<td>3</td>
<td>3.60</td>
<td>.85</td>
<td>.525</td>
</tr>
<tr>
<td>CF X ET</td>
<td>25.17</td>
<td>3</td>
<td>8.39</td>
<td>1.97</td>
<td>.121</td>
</tr>
<tr>
<td>Residual</td>
<td>442.36</td>
<td>104</td>
<td>4.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>439.23</td>
<td>111</td>
<td>4.11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 19  2 x 4 Analysis of variance of eyewitness testimony realism ratings for individual groups
Expert Testimony as a Basis of Decision

Subjects in the six expert testimony groups were asked to indicate how much they based their gunman vs. innocent person decision upon the expert testimony. A 10-point Likert scale was used (10 = based decision largely upon the expert testimony). Subjects in the relevant expert testimony groups gave mean basis of decision ratings of 6.89, compared to average ratings of 6.67 in the general expert testimony groups, and 6.60 in the judge's instructions groups. A 2 x 3 (eyewitness confidence by expert testimony) analysis of variance found a significant main effect for confidence, $F(1,78) = 6.64, p=.01$. (See Table 20 for the means of the six individual groups and Table 21 for the anova.) Subjects in the high confidence conditions reported basing their decision upon the expert testimony significantly more ($\bar{x}=7.38, n=42$) than subjects in the low confidence conditions ($\bar{x}=6.07, n=42$).
Table 20  Means for each group on subjects' 10-point Likert scale ratings of how much they based their gunman vs. innocent person decision upon the expert testimony (10 = based decision largely upon the expert testimony)

<table>
<thead>
<tr>
<th></th>
<th>High Confidence Eyewitness</th>
<th>Low Confidence Eyewitness</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Expert Testimony</td>
<td>8.29</td>
<td>5.50</td>
</tr>
<tr>
<td>Relevant Psy. Expert</td>
<td>7.14</td>
<td>6.21</td>
</tr>
<tr>
<td>General Psy. Expert</td>
<td>6.71</td>
<td>6.50</td>
</tr>
</tbody>
</table>

Table 21  2 x 3 Analysis of variance of expert testimony as basis of decision

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence (CF)</td>
<td>36.01</td>
<td>1</td>
<td>36.01</td>
<td>6.54</td>
<td>.01*</td>
</tr>
<tr>
<td>Expert Testimony (ET)</td>
<td>1.24</td>
<td>2</td>
<td>.62</td>
<td>.11</td>
<td>.39</td>
</tr>
<tr>
<td>CF X ET</td>
<td>24.67</td>
<td>2</td>
<td>12.33</td>
<td>2.27</td>
<td>.108</td>
</tr>
<tr>
<td>Residual</td>
<td>442.79</td>
<td>78</td>
<td>5.42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>484.70</td>
<td>83</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Realism Ratings of Expert Testimony

Subjects in the six expert testimony groups were asked to indicate on a 10-point Likert scale their agreement with the following statement, "The film presented a realistic example of a psychologist or judge giving testimony on research in the area of eyewitness testimony." (10 = strongly agree) Mean realism ratings for all six groups were adequately high (overall mean = 7.54, n=84) and are presented in Table 22. A 2 x 3 (eyewitness confidence by expert testimony) analysis of variance of subjects' ratings of realism found no significant differences among any of the cells. (See Table 23 for the anova.)
Table 22  Means for each group on subjects' 10-point Likert scale ratings of their agreement with the statement that the film presented a realistic example of a psychologist or judge giving expert testimony (10 = strongly agree)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>High Confidence Eyewitness</th>
<th>Low Confidence Eyewitness</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Expert Testimony (Control)</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Relevant Psy. Expert Testimony</td>
<td>8.07</td>
<td>7.71</td>
</tr>
<tr>
<td>General Psy. Expert Testimony</td>
<td>7.36</td>
<td>7.57</td>
</tr>
<tr>
<td>Judge's Instructions</td>
<td>6.50</td>
<td>8.00</td>
</tr>
</tbody>
</table>

Table 23  2 x 3 Analysis of variance of expert testimony realism ratings for individual groups

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence (CF)</td>
<td>4.29</td>
<td>1</td>
<td>4.29</td>
<td>.92</td>
<td>.55</td>
</tr>
<tr>
<td>Expert Testimony (ET)</td>
<td>5.00</td>
<td>2</td>
<td>3.00</td>
<td>.63</td>
<td>.53</td>
</tr>
<tr>
<td>CF x ET</td>
<td>12.67</td>
<td>2</td>
<td>6.33</td>
<td>1.35</td>
<td>.25</td>
</tr>
<tr>
<td>Residual</td>
<td>365.93</td>
<td>78</td>
<td>4.69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>388.89</td>
<td>83</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER V
DISCUSSION

No significant differences were found among any of the groups on the gunman vs. innocent person decision. The majority of subjects in all conditions believed the eyewitness identified an innocent person, thus failing to replicate the findings of Fox (Note 1). This lack of replication appears to be a significant finding in and of itself. The current study was the first known attempt to replicate the findings of any of the four studies that have thus far examined the effects of expert testimony on jurors' decisions. This study was methodologically equal to the Fox (Note 1) study. The exact same eyewitness videotapes, expert psychological videotapes, subject instructions and dependent measures were used. Therefore, the difference in findings may very well be related to sampling variability. However, subjects in both experiments were students in introductory psychology classes, the only difference being that the present study was run during the beginning of fall quarter as opposed to the middle of spring quarter for the Fox (Note 1) study. No known historical events which may have altered subjects' knowledge or perceptions of eyewitness testimony occurred between the running of the two experiments. An examination of control subjects' reasons for deciding that the eyewitness had identified an innocent
person failed to highlight any one particular cause for the discrepancy. Among the 28 control subjects, eight listed pressure as a reason for disbelieving the eyewitness, five cited a person's poor memory over time, nine made note of the gunman's average looks, fifteen listed the eyewitness' confidence as a factor, five stated that an eyewitness would look at the gun and not the face (weapon focus), four pointed out the concept of unconscious transference, though not by name, and four cited stress and fear as a factor. It is interesting to note that all of these factors were pointed out in the expert testimony conditions. However, the control subjects were able to identify these factors as significantly affecting eyewitness testimony without the aid of expert testimony.

This finding has both important applied and research implications. It may very well be the case that jurors are not lacking in the information supplied by expert testimony. An alternative, and more likely explanation of the results, is that some jurors may be lacking in the information supplied by expert testimony while others are not. It may also be that jurors are lacking in some of the information provided by expert testimony but, at the same time, are very knowledgeable of other portions of the testimony. Loftus (1979) has begun to investigate what knowledge the layman has of variables affecting eyewitness memory, but much more
research in this area is needed. Research examining subject-juror variables, such as age, sex, education, race, occupation, SES, intelligence, religion, etc., which may affect decision making regarding eyewitness testimony is also needed. The identification of particular subject-juror variables which could account for the discrepant findings could have tremendous impact on future jury selection in cases involving eyewitness testimony. It may be possible to establish a juror profile which would result in the selection of jurors who are highly knowledgeable about the variables affecting eyewitness memory. Psychologists could be called upon by the legal system to aid in the selection of jurors which match those profiles.

Despite the fact that all eight groups overwhelmingly found the defendant innocent, a number of significant differences were obtained on other measures. Relevant psychological testimony, general psychological testimony, and judge's instructions all significantly reduced estimates of the general percentage of accurate eyewitness testimony as compared to control groups. Further, subjects in all three expert testimony conditions were significantly less likely to believe that one can use confidence as an indicator of accuracy than subjects in control groups. Subjects in the control condition were also significantly more likely to base their decision of guilt vs. innocence
upon the eyewitness' confidence than subjects in all three expert testimony conditions. No other significant differences were found between any of the expert testimony conditions and the control groups.

Because the majority of subjects in all eight groups found the defendant innocent, it is difficult to compare differences among the three types of expert testimony. However, on those measures, cited above, in which significant differences did occur, the three forms of expert testimony did not differ significantly from one another. Psychological testimony had greater impact than the judge's instructions on all three of the above mentioned measures, but this difference did not attain statistical significance. These preliminary findings offer support to the use of judge's instructions as a method of conveying research information concerning eyewitness testimony. It appears as though the credentials of a judge versus psychologist as purveyor of psychological research to jurors is not a variable which significantly detracts from the information given. Jurors were just as willing to use the expert testimony of the judge as they were the psychologist. This finding again offers significant implications to the legal system. As previously reported, many members of the legal system have rejected expert psychological testimony on the grounds that it is too expensive, may cause undue delays,
and may be overly influential due to the psychologist's impressive credentials. The current findings may help to circumvent these arguments by providing support for the use of judge's instructions. Not only would this save time and money, but the much needed psychological research findings on eyewitness memory could find their way into courts that are currently rejecting psychological expert testimony. However, much more research is needed before the exact impact of judge's instructions can be determined. Future research, in which control subjects base their decision upon the eyewitness testimony and find the defendant guilty, is needed to determine the relative degree of impact of judge's instructions vs. psychological expert testimony.

The hypothesis that relevant expert testimony would have greater impact than both the general expert testimony and the judge's instructions was not supported. This again may be due to the failure to find differences among any of the eight groups on the gunman vs. innocent person decision. Future research which utilizes a dismantling strategy and investigates one or two of the factors affecting eyewitness accuracy at a time would be helpful. It could be determined if relevant expert testimony might be more beneficial in some cases which contain particular factors. The current results support the notion that simply bringing to the attention of the juror general information
concerning the unreliability of eyewitness memory and the failure of eyewitness confidence to predict accuracy is helpful.

As was previously noted, the psychologist's expert testimony did not have a significantly greater impact than the judge's instructions. However, it should also be pointed out that the psychological expert testimony was no less impactful than the judge's instructions. This would tend to refute those who argue that because of the public exposure of the Hinckley case and others, juries will tend to discount the expert testimony of a psychologist.

Subjects in the low confidence conditions reported basing their gunman vs. innocent person decision upon eyewitness confidence significantly more than subjects in the high confidence conditions. This was not surprising considering that the majority of subjects found the defendant innocent. Those subjects who viewed the low confidence eyewitness were more likely to utilize the lack of confidence as support for their innocence decision.

The manipulation check indicated that the high confidence eyewitness was perceived by subjects as significantly more confident than the low confidence eyewitness. In addition, realism ratings indicated that subjects viewed both the examples of eyewitness testimony
and expert testimony with which they were provided as believable. This again increases the likelihood that the discrepant results were not due to experimental manipulations but instead to subject variability.

The importance of replication in scientific research cannot be overemphasized (Kazdin, 1980). Unfortunately, however, replications are seldom attempted or at least are seldom reported in the literature. As Kazdin, 1980, points out, there are few professional rewards for replication attempts. If the original results are successfully replicated, the replication is met with indifference because it fails to provide new information to the literature. On the other hand, if the replication fails to yield the same results, the onus is upon the replicator to explain and demonstrate why there is a difference across studies. Replications are needed as direct tests of the reliability and generality of the original experimental relationship. As has been previously pointed out, this study marks the first known attempt at replicating the findings of any of the four studies that have thus far examined the effects of expert testimony. The fact that the results were not replicated does, indeed, call into question the reliability and generality of the original findings of Fox (Note 1). This study also points out the need for replication studies of the three previous expert testimony investigations
It may be the case that replications of the aforementioned studies have been attempted but not reported. It has previously been found that given investigators or journals may report only "positive effects" and systematically exclude all similar studies finding no differences (Greenwald, 1975). If replications were done which failed to yield similar positive results, they may have gone unreported. The nature of publication practices undoubtedly fosters biases about the information disseminated in the literature. Thus, original studies of the effects of expert testimony (as well as replication studies) which failed to achieve significant results, may have been completed but gone unreported. The current findings may be unique only when compared to those findings which have been published.

Limitations of the present investigation include the brevity of eyewitness and expert testimony in comparison to actual court cases. Jurors in actual court cases often have the opportunity to see both the eyewitness and the psychological expert questioned and cross-examined for longer periods of time. Judge's instructions would be more likely embedded in a longer list of instructions to jurors. The fact that subjects knew this was a simulation rather than an actual case also reduces the external validity of
the study. Additionally, as previously noted, subject variables may play an important role in determining the results of expert testimony research. The use of a college population may limit the generalizability of the results to an actual jury population.
Summary

The majority of subjects in all conditions found the defendant to be innocent, thus failing to replicate the results of Fox (Note 1). On those measures in which significant results were obtained, the three forms of expert testimony did not differ from one another. Thus, preliminary findings support the use of judge's instructions to convey psychological research concerning eyewitness memory. Future research is needed to determine exactly what knowledge the layman has of variables affecting eyewitness memory. Studies are also needed which control for subject variables to determine exactly which variables account for the differences in potential jurors' knowledge of eyewitness memory. Further replications of expert testimony research are also needed to determine the reliability and generalizability of the results found thus far. As is so often the case, the present investigation seems to have raised more questions than it has answered.
Reference Notes

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APPENDICES
SECTION A

LOW CONFIDENCE EYEWITNESS TRANSCRIPT
Introduction - (read to subjects by blind experimental assistant) -
"At the beginning of this portion of the videotape of the trial, the
prosecuting attorney asked the eyewitness to state his name and
occupation."

Prosecution

Witness: My name is, ah, Roy Wilkins. Ah - I'm the manager of the
7-11 store.

Prosecutor: Describe in your own words what happened the night of
November 14, 1981.

W: Well, I was - I was in the back of the store, ah, um, working.
Larry, that's Larry Gelbert, was out front at - at the register.
Ah, business was slow that night and I'd gone back to get some
stock for the shelves, ah, just to keep busy, you see.

P: And what time was this?

W: Ummm.... let's see, oh, it must have been pretty close to 11:30,
I'd say.

P: And what happened then?

W: Well, I - first I thought I heard somebody talking - talking kind
of loud out front, it ah - it sounded to me as if maybe Larry was in
an argument with somebody, and so I - I decided to go out and -
and see what was -- what was going on. About the time I thought I
should go on out, ah, it seems that - well there was a loud
noise. Ah, at first I thought maybe it was a gunshot, ah - ah
I wasn't - I wasn't sure. But anyway, I - I quick ran to the -
to the front of the store, and it seemed to me that - that they
were - that they were emptying - emptying the till. And ah, there
was - there was another man, I was pretty sure he was holding a gun.
Um, I looked around and - and there was Larry, Larry was lying on
the floor. Ah, ah, I don't recall, I think maybe he - he wasn't
moving. Ah, ah, anyway the whole scene, ah, startled me. I um,
I - I guess, and - and when this man that I - I thought was holding
the gun saw me, he ah - he called to the other two fellows to get
out of the store. And ah - and then he took a shot at me. And
it must have - it must have gone into the wall behind me.

P: And how long did all this take?

W: Oh, I - I don't know, I - I suppose a - maybe about a minute.
P: How did they get away?

W: Well...let's see. If I'm not mistaken ah - ah, the two - the two with the money ran off first. Yes, they - they, they ran off first. Ah, this man that was, ah, holding the gun, ah, he must - he must have left last. I noticed - I believe he stumbled, just as he went - yes, I think he did, he stumbled as he went through the door. I saw him - I saw him get up, and then he ran on down the street, ah, with the other two. And, ah, a little while later, it was, oh I suppose a matter of a few seconds I - I saw - ah, I heard a car squeal out.

P: Did you see this car?

W: No, ah - no, I - I guess - I guess it must have been around the corner. Ah, yes it was around the corner, out of sight.

P: And what did you do then?

W: Well...when I um, ah, when I saw them run down the street um, I - I hurried back to check on Larry, to see if he was um, if he was all right. And ah, um - well, I - I realized he was dead. I - I must have, I must have called the police next. And then when they came down I, I called the ambulance, the ambulance came and - and, ah, took Larry away. And ah - I guess I gave them a description at that time of what had happened - what I saw.

P: How old would you say they were?

W: Well, they were probably, ah, probably pretty young, ah.... I'd say, oh, nineteen, maybe 24 years old, maybe.

P: And what were they wearing.

W: Well, if I recall right, um......the one, um, the one with the gun, um, I think he was wearing a long, brown, sort of a heavy coat. One of the others had on a jacket, um, it must have been a blue ski jacket. And, um, the other was - was wearing a green coat. Yes, that was....he was wearing a green coat. I - I think they all had - - had jeans....jeans on.

P: Did you get a good look at their faces?

W: Well, I - I guess so. At least, um, I got a good look at the face, um, of the man with the gun. Um, the other two, they seemed to have their backs to me much - much of the time.

P: What were the lighting conditions like, was there enough light to see them?

W: Well, um, probably, I - I, think so .... we had the...we had the regular store lights on.
P: Have you positively identified a suspect as being the person with the gun who committed armed robbery and first degree murder that night?

W: Well I - I believe so.

P: Describe this identification for the court.

W: Well, um, you see when the police called me, ah, they said I should come down. That they, ah, they had a suspect, that, ah, fitted the description, ah, that I had, that I had given them. And so I went down, um....they had him in a cell, um, he was all by himself. And ah - ah, I looked at the man, ah, for awhile and, and I was pretty sure he was the man. And so I - I told the police that ah - he must be the right man.

P: And was that man the defendant?

W: Yes, sir.
Introduction — (read to subjects by blind experimental assistant) -
"At the beginning of this portion of videotape of the trial, the de­
defending attorney noted that the eyewitness stated earlier that all
of what he saw happened in about a minute. He then asked the eye­
itness how much of this time the eyewitness estimated that he spent
looking at the gunman's face."

**Defense**

Defense Attorney: You stated earlier that all of what you saw
happened in "about a minute". How much of this time would you
estimate that you spent looking at the gunman's face?

Witness: Well, I - I would say, um, I - I would say about thirty
seconds. Um...yes - yes it was about thirty seconds.

D: Are you saying you managed to look at his face for a half min­
ute while he fired a shot at you?

W: Well, um... I guess I was so amazed at what was happening, um....
just like I said I - um...I just stopped dead in my tracks. And
ah...I guess he missed me because, he must have been moving, I
think he was moving, trying to get out of the store all the time, see?

D: When he raised the gun to take a shot at you did you try to
move out of the way?

W: Well, he raised it so quickly I - I guess I didn't have time to
react, I -- I didn't have time to get out of the way, um, I did
jump, I must have jumped when he - when he shot the gun. It-it
scared the life out of me. Why, I've just never been in anything
like that before.

D: Was he moving all the while that you saw him?

W: Yes....um...well, I - I think he was, I - I'm pretty sure and -
and I guess that's when I got a - a pretty good look at his face.

D: Where were you looking during the other thirty seconds, when you
weren't looking at the gunman's face?

W: Well, ah...at Larry. Um, he was in bad shape there, lying on the
floor.

D: Well, are you sure that you didn't spend more than half the
time looking at Larry?

W: Ah...let me think, ah... you see, when I - when I first came
out from the back of the store I, I guess I was looking mainly at
Larry. But then when I realized what was happening, I spent most
of the rest of the time looking at the robbers, you see. And, ah...
when this - when this one man raised the gun to shoot at me, that
really drew my attention and, I must have locked at him the rest of
the time.

D: You say it was the gun that drew your attention?

W: Well, yes, I ah... I - I really couldn't believe what was
happening. And when he raised the gun I was so stunned I - well
I could hardly take my eyes off of it.

D: How far away was he standing from you?

W: Hmm... I'd say, ah....oh, just about thirty feet.

D: Are you sure it wasn't 35 feet, let's say, or 40 feet?

W: Well, um....well, I.... I don't know, um....I think it was
about thirty feet.

D: When you made the identification at the police station, how
long was that after the crime?

W: About a month.

D: Do you feel that you had a good enough look at the criminal's
face during all the excitement to be able to identify him a month
later?

W: Well, I- I - I think so.

D: When you went down to the police station to make the identifica­
tion, did the police say anything to you before showing you the sus­
pect?

W: Well, let's see, um....the sergeant told me that, they had a -
a suspect that fitted the description that I gave them. And, um,
he said that they were pretty sure that this was the man they were
looking for.

D: Did he say anything else to you?

W: Well... let me...he did say that, ah, this had been a tough case
for them, and that, um, they were going to be mighty glad to have
it closed and off the books.

D: Was there anything distinctive or unusual about the defendant's
face that helped you identify him?
W: No....I....I just remembered what he looked like.

D: Well, what would you say were the features you relied upon to identify him?

W: Oh, probably his brown hair, and his average build and - and height, and ah, well, just the - just the look on his face, I guess.

D: Well, how sure are you that the defendant is the criminal rather than merely resembling the criminal?

W: Well I....I'm pretty certain.

D: Mr. Wilkins, did you hear the defendant testify earlier that he shopped in your store two or three times during the two or three months previous to the crime?

W: Yes, yes I did, that.

D: Well, is it possible that you identified the defendant because you remember seeing him in your store before and he just happens to resemble the actual criminal?

W: No, I....I probably wouldn't do that, I....Um....I don't think so, no, I....I probably wouldn't do that.
SECTION B

HIGH CONFIDENCE EYEWITNESS TRANSCRIPT
Introduction — (read to subjects by blind experimental assistant) - "At the beginning of this portion of the videotape of the trial, the prosecuting attorney asked the eyewitness to state his name and occupation."

Prosecution

Witness: My name is Roy Wilkins, W-I-L-K-I-N-S. I'm the manager of the 7-11 store.

Prosecutor: Describe in your own words what happened the night of November 14, 1981.

W: Well, I was in the back of the store working. Larry Gelbart, was out front at the register. Business was slow that night and I'd gone back to get some stock for the shelves, just to keep busy.

P: What time was this?

W: It was ah, it was 11:30 at night.

P: And what happened then?

W: Well, I heard someone talking loud out front. Sounded as if Larry was having an argument with somebody. So I decided to go out and see what was going on. Well, as soon as I decided to go out, I heard a shot, a gunshot. Well, I quick ran to the front of the store, I saw two robbers at the counter emptying the till. There was a third one standing there holding a gun. Larry was over here (gestures) lying on the floor, he wasn't moving. Well, I was as scared I - I stopped dead in my tracks. And when the one holding the gun saw me he yelled to the other two to get out of the store right away. And he raised the gun, took a shot at me, it went into the wall.

P: And how long did all this take?

W: Just about a minute.

P: How did they get away?

W: Well, the two with the money, ran out first - the one with the gun left last, he stumbled just as he went to the door. He got up and ran out into the street with the other two. And a couple of seconds later I heard a car squeal out.

P: Did you see the car?
W: No, it was around the corner, it was out of sight.

P: And what did you do then?

W: Well, when I saw them run down the street I hurried back to check on Larry, to see that he - to see if he was still alive. He was dead. And so I - I called the police, they came down, the ambulance took Larry away. I gave them a complete description of what I saw.

P: Now how old would you say they are?

W: Well, they were young, 19, 24 years of age.

P: And what were they wearing?

W: Well, the one holding the gun was wearing a long brown heavy coat. And one of the others had on a blue ski jacket. The other, a green coat. All of them were wearing jeans.

P: Did you get a good look at their faces?

W: I got a good look at the face of the one with the gun. The other two had their backs to me most of the time.

P: What were the lighting conditions like - was there enough light to see?

W: Oh, yes, we had the regular store lights on.

P: Have you positively identified a suspect as being the person with the gun who committed armed robbery and first degree murder that night?

W: Yes, yes.

P: Describe this identification for the court.

W: Well, the police called me, asked me to come down, they said they had a suspect, so I went down, and they had him in a cell, all by himself. And as soon as I saw him, I knew he was the man. I told the police they had the right man.

P: Was that the defendant?

W: Yes.

P: Thank you Mr. Wilkins, I have no other questions.
"At the beginning of this portion of videotape of the trial, the defending attorney noted that the eyewitness stated earlier that all of what he saw happened in about a minute. He then asked the eyewitness how much of this time the eyewitness estimated that he spent looking at the gunman's face."

**Defense**

Defense Attorney: How much of this time would you estimate that you spent looking at the gunman's face?

Witness: About thirty seconds.

D: Are you saying then, that you managed to look at his face for a half minute while he fired a shot at you?

W: I was so amazed at what was going on, just like I said I stopped dead in my tracks. And he missed me because he was moving trying to get out of the store as soon as he could.

D: When he raised the gun to take a shot at you, did you try to move out of the way?

W: He raised it so quickly I didn't have time to react, to get out of the way. I did jump when he shot the gun -- I've never been in anything like that before.

D: Was he moving all the while you saw him?

W: Yes - he paused when he took the shot at me, and that's when I got a good look at his face.

D: Where were you looking during the other thirty seconds when you weren't looking at the gunman's face?

W: At Larry. He was in bad shape, lying there on the floor.

D: Are you sure you didn't spend more than half the time looking at Larry?

W: Oh, no. When I first came out from the back of the store, I looked mainly at Larry. But when I realized what had happened, I was looking mainly at the robbers. Like when the one raised the gun to take a shot at me, that really drew my attention. I spent at least half time - half of the rest of the time looking at him.

D: You say the gun drew your attention?
W: Well, of course. I couldn't believe what was happening. And when he raised the gun I was so stunned I could hardly take my eyes off it.

D: How far away were you standing from him?

W: Just about thirty feet.

D: Are you sure it wasn't 35 feet, let's say, or 40 feet?

W: No - it was thirty feet.

D: When you made the identification at the police station, how long was that after the crime?

W: About a month.

D: Do you feel that you had a good enough look at the criminal's face during all the excitement to be able to identify him a month later?

W: Oh, yes. Yes.

D: Let me ask you this. When you went down to the police station to make the identification, did the police say anything to you before showing you the suspect?

W: Yes, the sergeant said that they had a suspect that fitted the description that I had given them. He said he was pretty sure that, ah, he was the right man.

D: Did he say anything else to you?

W: He mentioned what a tough case this had been for them and how glad they were going to be to have it closed and off the books.

D: Was there anything distinctive or unusual about the defendant's face that helped you identify him?

W: No, I just remembered what he looked like.

D: What would you say were the features you relied upon to identify him?

W: Oh, his brown hair, his average build and height, and that look on his face.

D: Well, how sure are you that the defendant is the criminal rather than merely resembling the criminal?
D: Mr. Wilkins, did you hear the defendant testify that he shopped in your store two or three times during the two or three months prior to the crime?

W: Oh, yes, yes.

D: Well, is it possible that you identified the defendant because you remember seeing him in your store before and he just happens to resemble the actual criminal?

W: No - no, no, I'm sure he's the man. I could never forget that look on his face.
SECTION C

GENERAL EXPERT TESTIMONY BY PSYCHOLOGIST TRANSCRIPT
Introduction - (read to subjects by blind experimental assistant) -
"At the beginning of this portion of videotape of the trial, the 
defending attorney asked Dr. Walters how accurate, in general, the 
average eyewitness is."

General Expert Testimony

Defense Attorney: ....would you say the average eyewitness is?

Dr. Walters: Research using staged crimes has shown that, depend­
ing on the conditions, anywhere from 15% to 35% of eyewitnesses may
choose a wrong person from the lineup or a group of pictures. That
is, depending upon the conditions, 15% to 35% of the eyewitnesses
choose a person from the lineup that they believe is the criminal
but who in reality is not the criminal, but rather is an innocent
suspect.

D: Could you elaborate for us on how these researchers stage crimes
for the eyewitnesses to observe?

W: Many have the subjects view films of crimes, other studies use
crimes staged by the experimenter. After the subjects see the
crime, they are asked at a later time to identify the criminal
from a lineup of people or from a group of pictures.

D: So the eyewitnesses in this research do sometimes see an ac­
tual event?

W: Yes. In some of the experiments that have been done, the sub­jects do see actual live events. Often a theft or assault is staged
for the subjects, so it's relatively common to use a live event, but
not as common as films because the psychologists want to have some
control of the materials so you know every time you are presenting
it to a new group of people you are presenting exactly the same way,
whereas a live event might change a little bit each time it's
presented.

D: Could you give us an example of one of these staged events?

W: A situation that's used fairly often is to have someone attack
or assault a professor while he's lecturing in front of a college
classroom. The criminal is actually staging the attack and the
professor knows the attack is going to happen, but to the audience
it looks like a real assault is taking place. The people in the
class are then asked to pick the attacker out of a lineup of people
or a set of pictures. In this type of experiment, the people in
the audience, the eyewitnesses to the crime, are often unreliable
and inaccurate in their identification.
D: Why do eyewitnesses make errors in identifying the person who committed the crime?

W: Part of the reason is that identifying the criminal is made difficult usually by the circumstances and the conditions under which the crime and its identification take place.

D: Is eyewitness identification of a criminal usually different from, let's say, recognizing a friend on the street?

W: Yes, very different. Recognition of a friend is nearly always easier since you've seen that friend repeatedly. The repeated viewings of the friend's face and the context of your meetings with the friend help your memory and allow you to identify the friend to the point of near perfection. The eyewitness to a crime is usually being asked to identify a face he is not familiar with in a situation he has rarely, if ever, dealt with before. So the eyewitness to a crime is often much more likely to make a mistaken identification.

D: Describe how the eyewitness' memory records - records, rather, the image of the criminal and how errors might occur during this recording.

W: Well, first, let me say the brain does not work like a mechanical recording device. Research over the last fifty years does not support looking at the brain as if it worked like a videotape recorder. People just don't passively record events, memories are constructed through conscious and unconscious processes. Psychologists usually break memory into three stages. The first stage, called the acquisition stage, occurs when the eyewitness is viewing or perceiving the crime. During this time, only some aspects of the situation are attended to. Once the crime has been perceived, the information and impressions are stored in memory. Memory for an event usually doesn't stay the same, it may change during the second stage, called the retention stage. During the retention stage, information that was once part of the original memory of the crime might be lost, new information the person receives might change the memory of the crime. Finally, during retrieval, how the information in the memory is retrieved or called to mind by the eyewitness usually affects or even distorts the remembered image.

D: So you're saying that errors or changes in memory can occur during any or all of the three stages?

W: Yes, they can occur when the memory is first acquired, during the time you retain the memory, and when you retrieve the memory. Errors can occur at various points since there are several different types of memory.
Prosecutor: What do you mean when you say there are different types of memory?

Dr. Walters: Research supports there being three different types of memory - sensory memory, short-term memory, and long-term memory.

P: How are these three types of memory related?

W: Sensory memory lasts a very short time, usually a matter of a fraction of a second. Large amounts of information are stored there for just a very brief period of time. Only part of this information is transferred to short-term memory. Here the information will remain for at most a half minute or so. If the information is not rehearsed, the information in short-term memory will be lost. If the person rehearses the information in short-term memory, it may be transferred into long-term memory, where the information can be stored for a much longer period of time, months, perhaps years.

P: Could some of the information be lost in transfer between the different types of memory?

W: Yes, first of all, the initial perception of an event may not be complete or without distortion to begin with. Also, only some of the information from sensory memory will be stored in short-term memory, so information is lost in the transfer from sensory to short-term memory. Only a portion of the material in short-term memory, material that's rehearsed by the person, is transferred to long-term memory. Even when information is stored in long-term memory, parts of the memory tend to be lost over time, or the memory may change over time because of events that happen later.

P: What do you mean when you say memory can change because of the events that happen later?

W: A person receiving new information concerning an event after the person has witnessed the event may often include the new information as part of his description of his memory for that original event. In practical terms, this means a person may often remember what he was later told he should have seen, rather than what he actually saw. In many cases, it's almost as if the new information has become part of the original memory.
What is the best way another person can tell if an eyewitness' memory for the criminal is accurate?

The person should pay close attention to the situational factors that may help or hinder the accuracy of the eyewitness' perception of and recall of the crime, as well as the factors that may influence the eyewitness' recognition of a person as the criminal.

Would the eyewitness' confidence in the identification be any indication of how accurate the identification is?

There is considerable research evidence showing that the confidence of an eyewitness may have little or no relationship to the accuracy of the eyewitness. No, the confidence of the eyewitness in his identification is not a good indicator of how accurate his identification is likely to be.

What if the eyewitness is so confident that he identified the right person as the criminal that he says, "I'll never forget that face, I'm sure that's the man" after making an identification. Would a statement like that increase the likelihood that the witness made an accurate identification?

Again, the relationship of confidence to accuracy has generally been found to be weak to nonexistent. It would not be uncommon for a highly confident witness to be wrong, to be entirely in error, even if he made a statement like that.

Dr. Walters, could you summarize for the court how a person might best judge the accuracy of an eyewitness identification?

As I mentioned earlier, depending on the conditions, anywhere from 15% to 85% of eyewitnesses may choose a wrong person from a lineup. Identification of a criminal is very different from recognizing a friend. The eyewitness to a crime is usually being asked to identify a face he is not familiar with, in a situation he has rarely, if ever, dealt with before. Memory is a complex process, and information for an event can be lost or distorted during acquisition of the information, during retention or storage of the information, or during retrieval of the information. There are several different types of memory - sensory memory, short-term memory, long-term memory. A lot of information is usually lost in transfer from one type of memory to another. Even when the information is stored in long-term memory, parts of memory for an event may be lost over time or the memory may change over time because of events that happen later. There are many factors, then, which may influence or distort an eyewitness' perception of and memory for a criminal. It is very important to pay attention to the conditions or circumstances which may influence or distort the eyewitness'
accuracy. A person attempting to judge whether an eyewitness has identified the criminal or an innocent suspect should avoid placing any faith in the eyewitness' confidence. In short, in order to tell if an eyewitness is accurate, one should place little stock in how confident the eyewitness is about the identification and should instead focus on situational factors that may have facilitated or inhibited the accuracy of the eyewitness.
SECTION D

RELEVANT FACTORS EXPERT TESTIMONY BY A PSYCHOLOGIST TRANSCRIPT
Introduction - (read to subjects by blind experimental assistant) - "At the beginning of this portion of videotape of the trial, the de­fending attorney asked Dr. Walters how accurate, in general, the average eyewitness is."

**Relevant Factors Expert Testimony**

**Defense Attorney:** .....how accurate would you say the average eyewitness is?

**Dr. Walters:** Research using staged crimes has shown that, depending on the conditions, anywhere from 15% to 85% of eyewitnesses may choose a wrong person from a lineup or group of pictures. That is, depending upon the conditions, 15% to 85% of eyewitnesses choose a person from the lineup that they believe is the criminal but who in reality is not the criminal, but rather is an innocent suspect.

**D:** Could you elaborate for us how these researchers stage crimes for the eyewitnesses to observe?

**W:** Many have the subjects view films of crimes, other studies use crimes staged by the experimenter. After the subjects see the crime, they are asked at a later time to identify the criminal from a lineup of people or from a group of pictures.

**D:** So then the eyewitnesses in this research do sometimes see an actual event?

**W:** Yes. In some of the experiments that have been done, the sub­jects do see actual live events. Often a theft or assault is staged for the subjects, so it's relatively common to use a live event, but not as common as films because the psychologists want to have some control of the materials so you know every time you are presenting it to a new group of people you are presenting exactly the same thing, whereas a live event might change a little bit each time it's presented.

**D:** Could you give us an example of one of these staged crimes?

**W:** A situation that's used fairly often is to have someone attack or assault a professor while he's lecturing in front of a college classroom. The criminal is actually staging the attack and the professor knows the attack is going to happen, but to the audience it looks like a real assault is taking place. The people in the class are then asked to pick the attacker out of a lineup of peo­ple or out of a set of pictures. In this type of experiment, the people in the audience, the eyewitnesses to this crime, are often unreliable and inaccurate in their identifications.
D: What are some of the factors that affect eyewitness' memory and ability to make an accurate identification?

W: There are several physical factors that affect eyewitness reliability. The lighting conditions, the distance of the eyewitness from the criminal are factors. There should be adequate light - the eyewitness should be close enough to make an identification. Also, whether the criminal was moving or not may be important - fast movement may lower the likelihood of an accurate identification.

D: What about time and its effects on memory?

W: Generally, the shorter the time span the eyewitness has seen the criminal, the more likely it is that the identification may be in error. The length of time from seeing the crime to identifying the criminal is also important - research has generally shown that parts of memory are lost over time.

D: What are some of the other factors that affect an eyewitness' ability to make an accurate identification?

W: One of the major factors is stress. Research indicates that people under stress are more likely to make certain types of errors.

D: What are some of these errors?

W: Stress often causes people to overestimate the amount of time the event or crime took. That is, what may only have taken 10 to 15 seconds may seem like it took much longer, say a minute, or even five minutes. So the amount of time that an eyewitness views the criminal's face may be an overestimation if the person is under a lot of stress. There are factors related to stress such as violence and the presence of a weapon that also reduce eyewitness ability to make a correct identification.

D: How does the presence of violence influence eyewitnesses?

W: Research supports the idea that people viewing a violent, emotional event or crime are less likely to be able to accurately report what they saw than people who see a nonviolent event. Researchers explain this effect as being due to the emotionality or stress associated with the violent event. You see, there is research which supports stress having a number of general effects upon the way a person sees an event or crime. I mentioned before the tendency for people under stress to overestimate the amount of time the crime took. Stress can also have a restricting effect on attention - people just don't pay as much attention to what's going on - particularly if there is a weapon, such as a gun or knife, present at the scene of the crime.
D: How does the presence of a gun affect the way a person perceives or sees a crime?

W: Dr. Loftus, one of the leading researchers and authorities in the field of eyewitness testimony, talks about a factor called "weapon focus." What happens when a weapon is present is it tends to capture some of the witness' processing time and capacity, leaving less time available for other details and for other aspects of the incident. Weapon focus may have the effect of reducing the ability to describe and remember other aspects of the situation, such as remembering the person who was holding the weapon. However, people often have a very good ability to describe the weapon. That's what is meant by weapon focus.

D: What about the number of criminals committing a crime, would that affect the ability of an eyewitness to accurately perceive a crime?

W: Yes. Research has found that the more criminals present, the less accurate eyewitnesses report of the crime is. Again, during a brief period of time, having more than one criminal present requires more processing time. There's only so many details a person can process in a short period of time.

D: Are there any kinds or types of faces that are more likely to be remembered by an eyewitness?

W: Yes, people usually remember really unusual or distinctive faces easier, research has shown, that they do this better than remembering faces with no distinctive features. For instance, someone with an unusual nose, or someone with a noticeable scar on his face is more likely to be remembered by the eyewitness than someone who has no unusual features or an "average" looking face that's similar to a lot of other persons.

D: Is it possible that an eyewitness might misidentify someone as the criminal because his face looks familiar because of a contact sometime before the crime?

W: Yes, the term for this is "unconscious transference". This happens when an eyewitness confuses a person seen in one situation with a person that was seen in a different situation or in a different context. People will look at faces that they have seen at a different time - in different contexts - and mistakenly relate those faces back to an incorrect situation.
Introduction - (read to subjects by blind experimental assistant) -
"At the beginning of this portion of videotape of the trial, the
prosecuting attorney asked Dr. Walters to give an example of un-
conscious transference."

Prosecution
Prosecutor: Could you give an example of unconscious transference?

Dr. Walters: Patrick Wall has given a classic example of a train
clerk who was robbed at gunpoint. The train clerk subsequently went
to a lineup and picked a sailor out of the lineup. The sailor did
not commit the robbery, had a very good alibi, but had purchased
tickets from this train clerk on three prior occasions. What is
happening in this situation, the train clerk, the witness, goes to
the lineup. In fact, there is a face in the lineup that looks
familiar and that familiarity is mistakenly related back to the
crime, rather than back to the purchasing of the tickets. That's a
classic example of unconscious transference.

P: Are there factors which can affect an eyewitness' identification
of a suspect, let's say, when he's asked to do so by the police?

W: It's very important that the eyewitness have the opportunity to
pick the suspect out of a "fair" lineup. The chances of a misidenti-
fication are reduced if the eyewitness chooses a person out of a
group of persons who bear a reasonable resemblance to each other,
who look at least somewhat alike. For instance, people in the lineup
are the same race, same sex, no gross height or weight difference.
If that is done, the chance of a misidentification is reduced. It
is generally agreed that the worst method to use and the method
with the greatest likelihood of a wrong person being identified as
the criminal is what's called a "showup." In a showup the police
simply show the eyewitness a suspect by himself and ask the eyewitness
if that's the person who committed the crime.

P: What are some of the factors that make showing only one person
to the eyewitness a poor procedure?

W: The eyewitness often believes that the police have a good rea-
son for showing them the suspect, that they have some incriminating
evidence against the suspect, something like this. There are often
subtle but powerful psychological pressures on the eyewitness to
identify the suspect as the criminal. This effect will be especially
increased if the police put pressure on the eyewitness to identify
the suspect, for example, they might tell the eyewitness that they
W: (cont.) think they have the right man, or by indicating that they'll be pleased if the eyewitness can identify the suspect. People are often especially likely to be influenced by someone in authority, such as the police. Showing only one suspect to the eyewitness is likely to increase psychological factors influencing the witness to identify the suspect as the criminal.

P: Would the eyewitness' confidence in the identification be any indication of how accurate the identification is?

W: There is considerable research evidence showing that the confidence of an eyewitness may have little or no relationship to the accuracy of the eyewitness. The confidence of the eyewitness in his identification is not a good indicator of how accurate his identification is likely to be.

P: What if the eyewitness is so confident that he identified the right person as the criminal that he says, "I'd never forget that face, I'm sure that's the man" after making an identification. Would a statement like that increase the likelihood that the witness made an accurate identification?

W: Again, the relationship of confidence to accuracy has generally been found to be weak to nonexistent. It would not be uncommon for a highly confident witness to be wrong, to be entirely in error, even if he made a statement like that.

P: Dr. Walters, could you summarize for the court how a person might best judge the accuracy of an eyewitness identification?

W: As I mentioned earlier, depending on the conditions, anywhere from 15% to 35% of eyewitnesses may choose a wrong person from a lineup. It is important that they pay attention to conditions or circumstances which may distort or influence the eyewitness' testimony. Specifically, one should pay attention to the conditions under which the crime occurred. Such factors as lighting and how far the witness was from the criminal are important. One should note whether the situation was a dynamic and changing one - whether there was a lot of rapid, quick movement. Eyewitnesses often do worse under these conditions. Stress is a major factor - if the eyewitness was threatened, if there was violence involved - if a weapon was present, there is a greater likelihood of misidentification. It is important to consider that stress may lead to the eyewitness overestimating the amount of time the crime took which may involve an overestimation of the amount of time the eyewitness had to view the criminal's face. The number of criminals is important, as the number of criminals may reduce accuracy since it may cut down on the amount of time the eyewitness has available to process
W: (cont.) other variables. Time has important effects upon memory - the time the eyewitness actually had to view the criminal, the time between the crime and the identification by the eyewitness may have major bearing on whether an accurate identification has been made. The circumstances of the identification should be considered. One should consider whether a "fair" lineup was conducted, remembering that a "showup" or one-person lineup is the poorest condition under which the identification can take place. One should also pay attention to possible indications that the eyewitness was put under pressure from the police or from authorities to identify the suspect as the criminal. Generally, witnesses are more likely to correctly identify unusual or distinctive faces. One should also be aware that if the eyewitness has seen the suspect previously in some other context, that the eyewitness may have identified the person not because he was identified with the crime, but because the suspect's face is familiar - mistakenly related back to the crime. A person attempting to judge whether an eyewitness has identified the criminal or an innocent suspect should avoid placing any faith in the eyewitness' confidence. In short, in order to tell if an eyewitness is accurate, one should place little stock in how confident the eyewitness is about the identification and should instead focus on situational factors, including those I have mentioned, that may have facilitated or inhibited the accuracy of the eyewitness.
SECTION E

GENERAL EXPERT TESTIMONY BY JUDGE'S INSTRUCTIONS TRANSCRIPT
Judge Walters: Research using stage crimes has shown that, depending on the conditions, anywhere from 15% to 85% of eyewitnesses may choose a wrong person from a lineup or a group of pictures. That is, depending upon the conditions, 15% to 85% of the eyewitnesses choose a person from the lineup that they believe is the criminal but who in reality is not the criminal, but rather is an innocent suspect.

Part of the reason eyewitnesses make errors in identifying the criminal is that it is usually made difficult by the circumstances and conditions under which the crime and its identification take place. Eyewitness identification of a criminal is very different from recognizing a friend in the street. Recognition of a friend is nearly always easier since you've seen that friend repeatedly. The repeated viewings of the friend's face and the context of your meetings with the friend help your memory and allow you to identify the friend to the point of near perfection. The eyewitness to a crime is usually being asked to identify a face he is not familiar with in a situation he has rarely, if ever, dealt with before. So the eyewitness to a crime is often much more likely to make a mistaken identification.

There has been a large amount of research done over the last fifty years to discover how memory works. This research does not support the notion that the brain works like a videotape recorder. Memory can be broken down into three stages. The first stage, called the acquisition stage, occurs when the eyewitness is viewing or perceiving the crime. During this time, only some aspects of the situation are attended to. Once the crime has been perceived, the information and impressions are stored in memory. Memory for an event usually doesn't stay the same, it may change during the second stage, called the retention stage. During the retention stage, information that was once part of the original memory of the crime might be lost, new information the person receives might change the memory of the crime. Finally, during retrieval, how the information in the memory is retrieved or called to mind by the eyewitness usually affects or even distorts the remembered image. Errors or changes in memory can occur during any or all of the three stages. They can occur when the memory is first acquired, during the time you return the memory, and when you retrieve the memory. Memory can also change because of the events that happen later. A person receiving new information concerning an event after the person has witnessed the event may often include the new information as part of his description of his memory for that original event. In practical terms, this means a person may often remember what he was later told he should have seen, rather than what he actually saw. In many cases, it's almost as if the new information has become part of the original memory.
The best way, you, as jurors, can tell if an eyewitness' memory for the criminal is accurate is to pay close attention to the situational factors that may help or hinder the accuracy of the eyewitness' perception of and recall of the crime, as well as the factors that may influence the eyewitness' recognition of a person as the criminal.

The confidence of the eyewitness in his identification is not a good indicator of how accurate his identification is likely to be. There is considerable research evidence showing that the confidence of an eyewitness may have little or no relationship to the accuracy of the eyewitness. It would not be uncommon for a highly confident witness to make a statement such as "I'll never forget that face, I'm sure that's the man", and be wrong, entirely in error.

In summary, depending on the conditions, anywhere from 15% to 85% of eyewitnesses may choose a wrong person from a lineup. Identification of a criminal is very different from recognizing a friend. The eyewitness to a crime is usually being asked to identify a face he is not familiar with, in a situation he has rarely, if ever, dealt with before. Memory is a complex process, and information for an event can be lost or distorted during acquisition of the information, during retention or storage of the information, or during retrieval of the information. Parts of memory for an event may be lost over time or the memory may change over time because of events that happen later. There are many factors, then, which may influence or distort an eyewitness' perception of and memory for a criminal. It is very important to pay attention to the conditions or circumstances which may influence or distort the eyewitness' accuracy. A person attempting to judge whether an eyewitness has identified the criminal or an innocent suspect should avoid placing any faith in the eyewitness' confidence. In short, in order to tell if an eyewitness is accurate, one should place little stock in how confident the eyewitness is about the identification and should instead focus on situational factors that may have facilitated or inhibited the accuracy of the eyewitness.
SECTION F

DEPENDENT MEASURES AND COVER SHEET
1. Do you believe the eyewitness identified the gunman or an innocent person? Circle one of the choices below:

**Gunman**  
**Innocent Person**

2. How confident are you about your decision in the above question? Indicate your answer by circling a number on the scale provided below:

1----2----3----4----5----6----7----8----9----10

*not at all confident*  
*absolutely confident*

3. Based upon the testimony and evidence presented, rate the probability of the defendant's guilt by circling one of the numbers on the scale below:

1----2----3----4----5----6----7----8----9----10

**Definitely Guilty**  
**Definitely Not Guilty**

4. How confident was the eyewitness in the videotape in his ability to identify the gunman? Indicate your answer by circling a number on the scale provided below:

1----2----3----4----5----6----7----8----9----10

*Not at all confident*  
*Definitely Confident*

5. Estimate the percentage of people who would make a correct identification under the circumstances described by the eyewitness by circling one of the percentages provided below:

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

6. To what extent do you believe that you can generally tell from an eyewitness' confidence in his testimony whether or not the eyewitness made an accurate identification? Indicate your answer by circling a number on the scale provided below:

1----2----3----4----5----6----7----8----9----10

*Can almost never tell if eyewitness is accurate*  
*Can almost always tell if eyewitness is accurate*
7. What percentage of eyewitness testimony, in general, do you believe is accurate? Circle one of the percentages below:

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

8. In deciding upon whether you thought the eyewitness identified the gunman or an innocent person, how much did you base your decision upon the eyewitness' description of the crime? Circle one of the numbers on the scale below:

1----2----3----4----5----6----7----8----9----10

Did not base decision on eyewitness' description of crime at all
Based decision largely upon eyewitness' description of the crime

9. In deciding upon whether you thought the eyewitness identified the gunman or an innocent person, how much did you base your decision upon the eyewitness' confidence in his testimony? Circle one of the numbers on the scale below:

1----2----3----4----5----6----7----8----9----10

Did not base decision on the eyewitness' confidence at all
Based decision largely upon the eyewitness' confidence

10. Rate your agreement or disagreement with the following statement on the scale provided below: The film presented a realistic example of an eyewitness testimony.

-3----4----5----6----7----8----9----10

Strongly disagree
Strongly agree

(expert testimony by psychologist conditions)

11. How much did the psychologist's expert testimony affect your decision concerning whether you thought the eyewitness identified the gunman or an innocent person? Circle one of the numbers below:

1----2----3----4----5----6----7----8----9----10

Did not base decision on the psychologist's expert testimony at all
Based decision largely upon the psychologist's expert testimony
12. Rate your agreement or disagreement with the following statement on the scale provided below: The film presented a realistic and believable example of a psychologist giving testimony on research in the area of eyewitness testimony.

Strongly Disagree

Strongly Agree

(All conditions)

11. How much did the judge's expert testimony affect your decision concerning whether you thought the eyewitness identified the gunman or an innocent person? Circle one of the numbers on the scale below:

Did Not base decision largely upon the judge's expert testimony

Based decision largely upon the judge's expert testimony

12. Rate your agreement or disagreement with the following statement on the scale provided below: The film presented a realistic and believable example of a judge giving testimony on research in the area of eyewitness testimony.

Strongly Disagree

Strongly Agree

(All conditions)

13. Have you ever seen the judge depicted in the videotape before? If so, in what capacity?

14. Please describe in your own words in the space below how you decided that the eyewitness had identified the gunman or an innocent person:
Please provide your age, sex, year in college, and college major on the lines below. All information will be held strictly confidential.

Age:______________

Sex: M F (circle one)

Year in College: 1 2 3 4 graduate student (circle one)

College Major:_________________________________________________

Have you ever served on a jury before? Yes NO (circle one)
SECTION G

INTRODUCTION TO EYEWITNESS VIDEOTAPES
The purpose of the present investigation is to determine the nature of decision making among jurors. Please read the following description of a crime after which you will be viewing portions of a trial via videotape. You will then be asked to render a verdict as well as answer several other questions on the basis of the evidence presented. Obviously, this is only a summary of the actual court proceedings. However, please imagine yourself to be in a courtroom situation and assume that you are an actual member of the jury. If you feel that you cannot do this, please indicate this immediately.

You will shortly be viewing portions of a trial via videotape concerning the robbery and murder which took place in a large town in Montana on November 14, 1981. Previous to the portions of the trial you are viewing, the defendant had testified and stated the following points:

1. that he did **not** commit the crime,
2. that he had been in town for only three months and had not had the opportunity to develop close friends or ties in the town,
3. that he was at home in his apartment sleeping the night of the crime, and
4. that he had shopped at the 7-11 convenience store in question two or three times in the three months since moving to the town three months ago.

Please pay close attention to the videotape.
SECTION H

INTRODUCTION TO EXPERT TESTIMONY BY PSYCHOLOGIST VIDEOTAPES
Dr. Al Walters is a Ph.D. Clinical Psychologist who has been asked by the defense to testify as an expert on eyewitness testimony and memory. Dr. Walters has 18 years of forensic and courtroom experience, and has testified in numerous criminal cases. He is also a Clinical Psychology professor who teaches graduate forensic psychology courses. Additionally, he actively conducts, studies, and publishes research in the area of eyewitness testimony and memory.

Please pay close attention to the videotape.
SECTION I

INTRODUCTION TO EXPERT TESTIMONY BY JUDGE VIDEOTAPES
Judge Walters has been a judge for the state of Montana for the past 10 years. Prior to becoming a judge, he was a practicing attorney in Montana for 8 years. Additionally, he has taught law school classes and has actively conducted studies and published research in the area of eyewitness testimony.

Please pay close attention to the videotape.