Crime Seriousness as a Determinant of Accuracy in Eyewitness Identification

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Male and female subjects \((n = 65)\) witnessed a staged theft in which either an expensive object (high seriousness) or an inexpensive object (low seriousness) was stolen, and subjects either had prior knowledge of the object's value or learned of its value only after the theft. When witnesses had prior knowledge of the object's value, accurate identification of the thief was more likely when the theft was of high rather than of low seriousness. When knowledge of the crime's seriousness was gained after the theft, seriousness did not affect identification accuracy. These results suggest that the effect of perceived seriousness on accuracy is mediated by processes that operate during rather than after the viewing interval, processes such as selective attention and encoding. The present study also found that certainty of choice in the identification task was unrelated to accuracy of choice.

As students of legal testimony have long known, an eyewitness identification is often the most convincing and decisive source of evidence in a criminal court case (cf. Levine & Tapp, 1973; Wall, 1965). Jurors usually see little reason to distrust eyewitness testimony that is given under oath by individuals who have little to gain by falsifying their testimony. Consequently, jury verdicts can be influenced by eyewitness identifications, with obvious consequences for someone accused of a criminal act.

Despite its clear relevance as a social behavior, eyewitness identification, and the determinants of the accuracy, confidence, and willingness with which it will be offered, has received relatively little research attention from psychologists. This neglect is all the more remarkable in light of extensive research evidence that the human being is not a perfect recording device—evidence implying that eyewitness identification is less accurate and less reliable than commonly thought by the general populace, including judges, jurors, police, and lawyers. Buckhout (1974) has listed a number of factors that can contribute to unreliability of identification through their effects on perception, memory, and suggestibility. These include (a) situational factors existing when a crime is witnessed, such as length and conditions of observation and the apparent significance or seriousness of the criminal act; (b) characteristics of the observer-witness, such as stress level, needs, and motives; and (c) factors that operate during the identification test, including line-up bias, suggestion, and conformity pressures.

The present article reports an experimental test of one potentially influential factor, the perceived seriousness of the criminal act. There are several processes through which the
seriousness of a crime might influence eyewitness accuracy. Some of these imply that crime seriousness will be positively related to accuracy, whereas others imply a negative relationship. Among the former are the possible motivating effects of seriousness on attentional and encoding processes. A crime that appears serious, for example, may result in greater motivation to actively attend to the physical appearance of the criminal than a crime that appears trivial or innocuous. Similarly, a witness to a serious crime might engage in greater depth of processing (cf. Craik & Lockhart, 1972) of the criminal’s facial features and be more highly motivated to rehearse in memory what he or she has just witnessed. All of these effects should enhance memory for the criminal, so that, if perceived seriousness has such effects, eyewitness accuracy should be positively related to seriousness.

On the other hand, witnesses to a serious crime may have a greater desire to remain noninvolved than witnesses to trivial crimes. As a consequence, they may attempt to ignore the crime and pay less attention to the criminal. Serious crimes may also be more emotionally arousing than trivial ones, and this arousal may interfere with attentional and encoding processes. This should be especially likely when threat of personal injury or loss of personal property is involved. The work of Johnson and Scott (Note 1) and Scott (Note 2) suggests that eyewitness accuracy can be reduced if the crime is highly arousing (i.e., the witness observed a blood-stained man carrying a knifelike object).

The present study is concerned with determining whether or not heightened seriousness of a crime will increase accuracy of identification under circumstances of relatively low arousal. Seriousness of the crime was operationalized as the monetary value of a stolen object. In a staged theft, either a relatively expensive (high seriousness) or inexpensive (low seriousness) object was stolen. To minimize arousal, the stolen object was neither a possession of the witnesses nor did it belong to anyone known to the witnesses. Furthermore, no personal threat was made or implied to the witnesses during the theft.

The possible effects of perceived seriousness discussed so far have been limited to processes that might operate at the time of witnessing a crime. It is also possible that crime seriousness affects processes that operate subsequent to witnessing the crime, such as during the identification task. For example, seriousness might affect how carefully a witness examines each mugshot or lineup member, or the effort the witness puts into recalling the criminal’s physical features. In the present study, the concern is entirely with the effects of seriousness that occur during the observational period, so any processes that might occur during the subsequent identification task were controlled for in this study. This was accomplished by informing all subjects before the identification task that the crime had been staged.

The crime seriousness factor was crossed with whether subject-witnesses knew what the stolen object was before the theft, or found out only after the crime had occurred and the transgressor had vanished. Thus, the full design was a 2 (high vs. low seriousness) X 2 (knowledge before vs. after) factorial. If crime seriousness affects attention and encoding during initial viewing so as to enhance memory, giving information about crime seriousness after the fact (that is, after the transgressor has vanished) should have no effect on identification accuracy. Similarly, if crime seriousness decreases attention through motivating subjects to remain noninvolved, such an effect should occur only when there is seriousness knowledge during witnessing. Thus, it was expected that crime seriousness should influence accuracy only in the knowledge-before conditions.

Method

Subjects
Sixty-five male and female introductory psychology students at Ohio State University participated in the experiment in partial fulfillment of a course requirement. Subjects participated in groups ranging in size from 2 to 8, and were assigned to groups without regard to sex. Groups were randomly assigned to treatments.

Procedure
Subjects signed up earlier in the quarter for an experiment described as involving “personality as-
cessessment." Upon arrival at the experimental site, they were seated in a reception room and asked to wait while the experimenter prepared materials elsewhere. Seated among subjects was an experimental confederate who served as the thief. When all subjects had been seated, the experimenter entered the reception room and made the following inquiry: "I have a subject on the phone from an earlier session who says she left a bag here. Has anyone seen it?" The confederate-thief pointed to a brown paper bag sitting on a nearby table and asked, "Is that it?" At this point, the seriousness manipulations were introduced in the knowledge-before-theft groups. In the high-seriousness-knowledge-before groups, the experimenter replied, "Yes, that's it. That's her calculator." In the low-seriousness-knowledge-before groups, the word "cigarettes" was substituted for "calculator." In knowledge-after-theft conditions, the reply was simply "Yes, that's it."

The theft. Following this interchange, the experimenter left the room to complete the phone call. After he was out of sight, the confederate-thief grabbed the paper bag and hastily made to leave. To ensure that all subjects would attend to this theft, he then dropped the bag, picked it up, and quickly exited.\(^1\)

Approximately 1 minute later, the experimenter returned and inquired as to the whereabouts of the paper bag. At this time, the seriousness manipulations were introduced in the knowledge-after-theft groups. In the high-seriousness-knowledge-after groups, after at least one subject had informed him of the apparent theft, the experimenter exclaimed, "You're kidding! That was her calculator!" In the low-seriousness-knowledge-after groups, "cigarettes" was substituted for "calculator." In the knowledge-before groups, it was simply, "You're kidding!"

The experimenter next noted that it was too late to catch the thief by now, but that he could probably be tracked down on the basis of the sign-up sheets. He implied that he "would attend to this matter later" and then escorted subjects to a small classroom. In this room, the experimenter handed out the Rotter Internal-External Locus of Control Scale (Rotter, 1966) instructing subjects to complete the first 10 items and then to stop. When all had done so, he informed subjects that "it is important in studies like this to know what subjects' ideas about the experiment are" and that, for this purpose, they should turn over their questionnaires and write on the back what they "feel the experiment is about." This served as a check on suspicion. When all subjects had finished this, the experimenter indicated that the study involved an interview as well as a questionnaire and that he would take subjects to be interviewed one at a time while the rest completed their questionnaires. Subjects were then individually escorted to another room where it was made known to them that the theft had been staged. They were then requested to identify the thief from a photospread and asked ancillary questions relating to identification. Once the dependent measures were secured, subjects were fully debriefed, sworn to secrecy, and dismissed.

### Dependent Measures

**Accuracy.** The principal dependent measure was accuracy of eyewitness identification. Subjects examined a photospread of six full-face pictures, including the confederate-thief's (which was always placed second from the left), and identified which, if any, of the men shown had been the thief in the earlier incident. If they felt the thief was not in the photospread, they could indicate so. This photospread had been prestested and found bias free.\(^2\)

**Certainty.** After the identification task, subjects indicated, for each of the six faces, how certain they were that the man was or was not the one who stole the bag. Responses were given on a 10-point scale, ranging from .0 ("completely certain he was not the thief") to 1.0 ("completely certain he was the thief"). The midpoint (.5) was labeled uncertain.

**Characteristics of the theft.** Subjects were asked what was stolen, their estimate of its monetary value, and their subjective belief about how serious the crime was. This last question was answered on a 7-point scale (1 = not at all important; 7 = very important). These questions served as checks on the seriousness manipulations.

### Results

**Manipulation and Suspicion Checks**

Analysis of variance revealed that subjects in the high-seriousness conditions estimated the crime to be more serious, \(F(1, 61) = 4.77, p < .04\), and the value of the stolen object to be greater, \(F(1, 61) = 21.51, p < .00002\), than subjects in the low-seriousness conditions. The average estimated value of the stolen object was $46.44 in the high-seriousness conditions and $1.49 in the low-

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1 In two cases, a subject attempted to intervene in the theft. Both times this intervention took the form of the subject getting up and following the confederate-thief after he had left the room. Both of these subjects came from a high-seriousness-knowledge-before group and were eliminated because it was necessary to debrief them once they caught up with the confederate.

2 To test for bias in the photospread, subjects in a pilot study who had never seen the confederate-thief were given a verbal description of his physical and facial characteristics. They were then asked to pick him out of the photospread used in the experiment proper. None of the six photos received significantly more choices than any other. Following Wells and Ostrom (Note 3), this equiprobability of choice over the photospread faces was the criterion of fairness and unbiased of the photospread.
Table 1
Percentage of Accurate Identifications

<table>
<thead>
<tr>
<th>Time of knowledge</th>
<th>Seriousness</th>
<th>%</th>
<th>n</th>
<th></th>
<th>%</th>
<th>n</th>
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<td>High</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Before</td>
<td>56.3</td>
<td>16</td>
<td></td>
<td></td>
<td>18.8</td>
<td>16</td>
</tr>
<tr>
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<td>12.5</td>
<td>16</td>
<td></td>
<td></td>
<td>35.3</td>
<td>17</td>
</tr>
</tbody>
</table>

seriousness conditions. There were no interactions with the knowledge factor on these variables (p > .2).

The suspicion check revealed that five subjects were suspicious and that suspicion was unrelated to experimental condition: Two cases of suspicion were in each of the knowledge-after conditions and one was in the low-seriousness-knowledge-before condition. None of the suspicious subjects made an accurate identification. Each of the analyses reported below was also performed with these subjects excluded. These reanalyses did not change any statistical decisions.

Accuracy

Identification. Table 1 presents the percentage of subjects in each condition who accurately identified the confederate-thief. The hypothesis that crime seriousness should be related to accuracy, but only when knowledge of seriousness exists at the time of the crime, predicts a Seriousness × Time of Knowledge interaction. To test this interaction, the statistical procedure suggested by Langer and Abelson (1972) for treating interactions in proportion data of 2 × 2 designs was employed. As portrayed in Table 1, the predicted interaction was significant (Z = 2.66, p < .01). To assess the nature of this interaction a series of chi-square tests was undertaken. Consistent with the idea that seriousness enhances attentional and encoding processes, more subjects in the high-seriousness-knowledge-before condition made accurate identifications than in the low-seriousness-knowledge-before condition, \( \chi^2(1) = 4.80, p < .05 \). Percentage of accurate identification in the two knowledge-later conditions, on the other hand, was not affected by seriousness, \( \chi^2(1) = 2.33, p > .10 \). Finally, a comparison of the two high-seriousness conditions revealed a greater percentage of accurate identification in the knowledge-before condition, \( \chi^2(1) = 6.79, p < .01 \).

Certainty

A matter of practical concern is the certainty with which witnesses make their identification, since jurors are more likely to believe a witness who is highly certain in his testimony than a witness who is not highly certain. In the present study, the correlation between certainty and accuracy among subjects who made an identification (n = 43) was low and not significant (r = .16). In addition, the certainty given to the picture identified, whether correct or false, was not affected by condition, as revealed by a one-way analysis of variance, \( F(3, 39) < 1 \). The overall lack of correlation between certainty of choice and accuracy is consistent with the findings of Brown, Deffenbacher, and Sturgill (1977), who examined recognition for a target person who had earlier been observed performing a noncriminal act. One possible reason for these negligible correlations might be an absence of variability in certainty ratings given by subjects who are willing to make a definite identification. Some support for this interpretation was provided by the distribution of certainty ratings in the present study. The interquartile values of this distribution were as follows: \( Q_1 = .772; Q_2 = .853; \) and \( Q_3 = .936 \). More than 88% of the choosing subjects attached at least a .7 certainty rating to their choice. Apparently, subject-witnesses only were willing to make an identification when they were fairly certain. Whether or not their identification was correct, they were confident about it.

The low variability suggests the need for a more sensitive measure of certainty. To achieve this, a relative certainty score was computed for each subject who made an identification by subtracting the average certainty rating given by that subject to the five unchosen pictures from the certainty given to the chosen picture. Substantial variability was present for this relative certainty mea-
sure \( (Q_1 = .395; \quad Q_2 = .500; \quad Q_3 = .700) \). This measure has another advantage over the absolute certainty rating. It controls for individual differences in the origin of the certainty rating scale that are known to exist (cf. Brown et al., 1977), thereby eliminating a response bias that affects the interpretation of Brown et al.’s finding of no certainty-accuracy relationship. The correlation between relative certainty and accuracy in the present study was found to be insignificant \( (r = .09) \).

Taken together with Brown et al.’s results, this encourages the conclusion that certainty of choice and accuracy are unrelated in eyewitness identification.

To analyze subjects’ overall certainty that the picture of the confederate was that of the thief, the average of each subject’s certainty rating of the five incorrect pictures was obtained and subtracted from his or her certainty rating of the confederate-thief (regardless of whether the subject had made a correct, false, or no identification). The means of this difference score were .361, .226, .189, and .252, for the high-seriousness-knowledge-before and knowledge-after conditions and the low-seriousness-knowledge-before and knowledge-after conditions, respectively. An analysis of variance revealed that although the pattern of certainty ratings is consistent with the identification data in that there is higher certainty in the high-seriousness-knowledge-before condition than in the others, neither the interaction, \( F(1, 59) = 1.22, p < .28 \), nor the main effects \( (F's < 1) \) reached significance. This lack of a treatment effect on certainty about the correct picture is consistent with the finding noted above that certainty and accuracy were unrelated among subjects who made an identification.

**Discussion**

The results of the present experiment indicate that the perceived seriousness of a crime, in this case the value of a stolen item, can be a significant determinant of accuracy in eyewitness identification. When they knew what was being stolen, subject-witnesses were more likely to later correctly identify the thief if the stolen object was relatively expensive than if it was inexpensive and trivial. Likewise, witnesses who knew an expensive object was being stolen were more accurate than witnesses who did not know what the stolen object was until after the theft was over. In addition, as expected, when knowledge of seriousness was gained when the crime was over, it had no effect on accuracy of identification.

These findings support the hypothesis that perceived seriousness plays a role in motivating witnesses to make full use of selective attentional and encoding capacities in eyewitness situations. By motivating the witness to actively attend to the criminal, the belief that the act is serious may result in examination and encoding of more facial characteristics than people usually focus on. The effects may be similar to the depth of processing effect observed by Bower and Karlin (1974). These authors found that memory for a face is better if, upon initial exposure to the face, individuals are asked to make judgments that require more thought about or analysis of the face (for example, making judgments of honesty as opposed to judgments of sex). Bower and Karlin suggest that this greater depth of processing is characterized by attention to and examination of a greater number of facial features. In terms of witnessing a crime, such a greater depth of processing is probably necessary when one must later recognize the transgressor’s face from a line-up in which the distractor faces are (or should be) deliberately quite similar. When motivation to attend is not enhanced by perceived seriousness, the few seconds of exposure to the transgressor may be insufficient for enough processing to permit recognition memory on such a task. Greater rehearsal in short-term memory, of course, is another plausible effect of perceived seriousness. A reasonable assumption at this time would be that both attentional and rehearsal processes will vary with perceived seriousness.

The staged theft in the present study was, at most, mildly arousing and involved none of the upsetting scenes (e.g., a knife, a bloodied shirt, the possibility of murder, etc.) that characterized incidents employed by Johnson and Scott (Note 1) and Scott (Note 2). Simi-
larly, the costs of becoming involved (i.e., being a witness) in a petty theft are probably not so great as the cost of becoming involved in a felony. It may be that, across the full range of crime seriousness, the relationship between seriousness and accuracy is a curvilinear one: Seriousness increases accuracy to a point through greater attention and encoding and then decreases accuracy because of its arousal and avoidance properties. No doubt the present experiment only tapped the lower range of seriousness.

The limited range of seriousness in the present experiment, though, is not an unimportant one. Defined in terms of monetary value, seriousness ranged from a theft of about $1.50 in goods to one of nearly $50.00. Thus, the results of the present experiment may be generalizable to such common crimes as shoplifting and purse snatching.

It is noteworthy that subject-witnesses' certainty of their identification and its accuracy were not related. As noted above, the same absence of a relationship was found by Brown et al. (1977) in a noncrime setting. Scott (Note 2), in addition, has found low and usually insignificant correlations between certainty and a variety of free-recall measures in experiments where arousing criminal scenes have been staged. Our results not only extend these prior findings to photospread identification tasks for witnesses of a crime but also deal with a possible criticism of the earlier findings that the measures of certainty yield little variability in subjects' reports of certainty and thereby lead to artifactually low estimates of the certainty-accuracy correlation. In the present study, no significant correlation was found even when we employed the relative certainty measure, on which there was considerable variability in estimates of subjects' certainty.

Expressed confidence by witnesses regarding their identification can be a powerful factor in persuading a jury. It is intuitively appealing that those who are more confident should be more accurate. Respondent confidence is certainly related to accuracy in a number of tasks (such as multiple-choice tests in course examinations and discriminations in signal-detection tasks). Line-up identification tasks differ from these others in that they allow a "do not know" response. Apparently, subjects who are willing to give a "do know" response under these circumstances are equally certain of their identification regardless of its accuracy. Should this lack of association between certainty and accuracy be more broadly supported, it represents a finding of major significance to those concerned with criminal justice.

The results of this study relate to the generalizability of laboratory-based research to eyewitness identification in criminal investigation and prosecution. The criticism is sometimes heard that the staged crimes used in the laboratory are considerably more trivial than real crimes. If accuracy is affected by perceived seriousness, as the present data indicate, the overall level of accuracy (about 20%-30%) obtained in the laboratory may underestimate the accuracy that exists in actual crimes. It could be argued, on the other hand, that the laboratory overestimates the level of accuracy. Most laboratory simulations do not involve threat of personal injury or other highly arousing and distracting characteristics that could impair accuracy.

There is little reason to believe that the observed accuracy in the high-seriousnessknowledge-before condition is not a realistic laboratory reflection of the accuracy that results when real-life crimes of comparable importance and arousal occur. Within ethical constraints, the calculator theft was perhaps as realistic as possible. (Such a contention is supported by the behavior of the two subjects who attempted intervention.) It is clear that laboratory-based experiments cannot be all placed in one category and dismissed as being irrelevant.

Practical Implications

The findings reported here have several practical implications. First of all, at least in nonfelonious crimes such as petty theft, the criminal prosecutor who dwells on a crime's seriousness in selling the accuracy of an eyewitness testimony to a jury may indeed have a good point when seriousness was salient to the witness while he viewed a crime of other-
wise low arousal value. Second, while certainty of testimony may have quite predictable effects on jurors, it appears to be a poor predictor of accuracy of testimony. The present findings might be of use to defense attorneys in commenting on the certainty of eyewitnesses. They should also discourage investigators from placing more weight on the identification of a certain witness than an uncertain witness.

Reference Notes


References


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