Symptom Validity Testing of Remote Memory in a Criminal Forensic Setting

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Symptom Validity Testing (SVT) has been used effectively with sensory perception and short-term memory. The procedure was recently adapted to assess remote memory for specific events. Memory for remote events is particularly important to the criminal justice system, and courts are beginning to draw on neuropsychology to assist in the assessment of claimed remote memory loss. This report discusses the importance of this objective technique to neuropsychologists involved with criminal courts and presents its use in three cases from the criminal forensic arena. Normative results for the three case study tests are presented and suggest the procedure is a robust version of SVT. Implications of these results are discussed.

Neuropsychologists commonly evaluate memory ability within forensic settings. Symptom Validity Testing (SVT; Pankratz, 1979) has been successful in assisting evaluators in identifying negative response bias and malingering of short-term memory (Hiscock & Hiscock, 1989; Binder, 1990). Frederick and Carter (1993) adapted the procedure to assess claims of amnesia for specific past events. Frederick, Carter, and Powel (1995) presented case studies using the procedure. This report discusses the use of SVT for assessing historical events and presents three cases within the criminal forensic arena as an effort to replicate results of Frederick et al. Furthermore, a normative sample was used to evaluate the assumptions that the procedure actually conforms to probability standards of the binomial theorem.

Neuropsychological assessment has become a more common event in the criminal judicial process (Larrabee, 1992a; Pirozzolo, Funk, & Dywan, 1991). Patients within this setting often have specific areas of memory loss or amnesia (Wiggins & Brandt, 1988). This finding is particularly true in the criminal realm as individuals are charged with crimes that result from specific behavior at a particular time in the past, and there is obviously considerable focus on those past behaviors. There are occasions, such as acquisition of brain injury at time of arrest, when defendants may legitimately not remember events occurring at the time of the alleged offense. Individuals also acquire debilitating mental or neurological illnesses while...
awaiting legal proceedings given the oftentimes lengthy disposition of many complex criminal cases. Finally, individuals may have performed the alleged acts while acutely intoxicated and secondarily suffer from substance-induced amnesia (e.g., alcohol blackout). Quite commonly, however, criminal defendants claim remote memory loss when, in fact, there is none (Rubinsky & Brandt, 1986).

Individuals can feign memory loss and use some proposed history of illness as the etiology (e.g., Lupus Erythematosus, Chronic Fatigue Syndrome, Rocky Mountain Spotted Fever, etc.). In addition, individuals with legitimate neurological concerns or trauma may exaggerate their memory deficit in the hope that they cannot be prosecuted and will ultimately return home. On occasion, courts have requested forensic mental health evaluations with the specific intent of identifying whether the memory loss is indeed legitimate or feigned. As neuropsychology continues to increase in prevalence within the criminal forensic setting, professionals will increasingly be asked to perform such “malingering” examinations. Literature reveals ongoing debates regarding the ability of neuropsychologists to detect malingering (Barth, Ryan, & Hawk, 1992; Bigler, 1990; Faust & Guilmette, 1990), and certainly, professionals should use objective measures as opposed to relying on clinical judgment alone (Dawes, Faust, & Meehl, 1989; Faust et al., 1988). One such objective measure which has recently received a great deal of attention is SVT (Prankratz, 1979).

SVT was developed as a means to assess perceptual and memory complaints (Pankratz, 1979; Pankratz, Fausti, & Peed, 1975). The strategy is based on the binomial theorem which purports that when an individual with no ability/knowledge is asked questions with only two possible answers of equal probability, test results will fall within a predictably random range and distribution. Ability affects the test results by raising them above the random range. Ability is also demonstrated when results fall significantly below random chance as the person must have ability to select the incorrect answer more often than would occur by random chance alone. Lezak (1995) described its use with five digit numbers and the subject counting backward out loud as a distraction before attempting to recognize the correct number.

Hiscock and Hiscock (1989), with the Digit Memory Test, successfully revised the strategy to incorporate three trials of five digit numbers with increased delay times to simulate increased difficulty. Binder (1990) created the Portland Digit Recognition Test by incorporating the Digit Memory Test strategy with Lezak’s description of counting during the delay period as a distraction. Researchers have begun to address the procedure’s utility even in absence of below random chance levels of performance (Binder, 1993b; Prigatano & Amin, 1993). The general procedure has been abbreviated significantly with continued success and less administration time (Binder, 1993a; Guilmette, Hart, Giuliano, & Leininger, 1994). Recent and exciting developments in the paradigm include correlating subject performance with item difficulty to create a more sensitive predictor (Frederick & Foster, 1991; Frederick, Sarfaty, Johnston, & Powel, 1994). Frederick and Carter (1993) adapted the procedure to address historical events for which a competency evaluate claimed no memory. Frederick et al. (1995) presented the procedure again but with cases from civil and criminal court systems to demonstrate its utility.

**THE PROCEDURE**

Initially, the most important issue is acquiring specific investigative information from the referring court or attorney regarding the details of events during the claimed amnestic period. This information can come from prosecution investigative records, medical records, or directly from interviews with witnesses, family members, or law enforcement personnel.
Enough detail must be acquired to create a reasonable number of questions; however, questions should be created in such a manner that it is reasonable to believe an individual without significant memory loss would likely remember the information. The use of too detailed questions lessens the power of the test by increasing the likelihood of a random response pattern even in the face of feigned memory loss. Whereas there is no gold standard as to what amount of detail a person can or cannot remember under such criminal justice circumstances, the only error in creating too finely detailed questions, such that a person cannot legitimately recognize the event even with good memory, is simply to lessen the likelihood of a significant finding. In essence, such error would make the procedure more conservative. If the subject actually committed the alleged crime, they would not only have personal experience from which to draw, but the information would be listed in the investigative reports supporting the criminal charges, their attorney will have discussed the prosecution documents with the them, and the subject will likely have attended an arraignment where the charges are presented again. It is good to remember that their memories only need to be adequate enough for prompting by recognition rather than free recall. Finally, it is wise to have the items reviewed by another clinician to help validate the detail of the question.

Questions should also be worded in such a manner as to avoid direct admissions of guilt (e.g., “Investigative records allege...”) or “The indictment claims...”) rather than forcing the person to select an item worded in the first person. The procedure is to identify false amnesia not guilt. As with any test, the more questions created, the more reliable the test and the more test variance it will contain (Crocker & Algina, 1986). Review of items by another clinician familiar with forensic evaluations also helps to avoid inappropriate item wording.

Questions are created with one reasonably plausible alternative answer for each. Frederick, Carter, and Powel (1995) noted the difficulty of creating alternative answers which are as plausible as the correct answer. It is unlikely the correct and alternate answers would actually be 0.50 probability. The authors suggest that given alternative answers which are plausible such that they “reasonably approximate p = 0.50,” the robustness of the test statistic would minimize such error given the randomness of bias and an adequate number of questions. The authors further emphasize the need to particularly avoid creating an alternative answer which actually appears more likely than the correct answer. This caution should guarantee that any inappropriate test bias would not occur in the direction of suppression, therefore, making a more conservative test.

Subjects are instructed that as a result of their memory difficulties, they will be tested regarding their memory for those specific events to more fully understand their memory problem. Each item is presented initially to identify whether or not the subject admits to having memory for that item. Items for which adequate memory exists are discarded as the procedure is only effective when no ability is claimed. Items for which the subject “reasons-out” the answer are also discarded (e.g., What was the color of the bandanna? “It was a Crip neighborhood, so it must have been blue.”). If the subject indicates no memory for the information depicted in the item and does not invalidate the item through reason, the item is given with instructions to choose the correct item or simply guess if they cannot remember. Subjects are then told whether they are correct or incorrect. If incorrect, the correct answer is given. Oftentimes the correct answer leads directly into the next question (e.g., Do investigative records allege you wearing a hat? Yes or no? The answer is yes. Was the hat red or blue?).

Correct responses are then totaled and used with this formula from Siegel (1956, p. 41):

$$z = \frac{(x \pm .5) - NP}{\sqrt{NPQ}}$$
where \( z \) is the test statistic, \( x \) is the number of correct responses, \( N \) is the number of questions administered, \( p \) is the probability of a correct discrimination given no true ability (0.5), and \( Q \) represents \( 1 - p \). The correction, (adding 0.5 when \( x < NP \); subtracting 0.5 when \( x > NP \)), is made to correct for continuity because the binomial distribution involves a discrete variable. Generally speaking, the evaluator is attempting to identify suppression of scores below \( 1 - p \), or 50%, and would therefore add 0.5 to \( x \). A one-tailed test is used to identify probability with the Unit Normal Table (\( z \) table). A one-tail test is suitable in this situation given the specific intent of identifying suppressed scores (Larrabee, 1992b; Siegel, 1956). A \( z \)-score of 1.65 is significant at \( p = 0.05 \) and \( z \)-score of 2.33 is significant at \( p = 0.01 \) using a one-tail test.

It is best to attempt acquiring at least 25 effective questions in order for data to more accurately reflect the binomial distribution, but the provided formula is robust enough to effectively work with smaller \( N \)s (Siegel, 1956). (Siegel actually provides a table of exact probabilities for \( N < 25 \); however, the formula appears to compare well down to about \( N = 12 \), p. 250). The following cases from the author’s practice with the U.S. District Courts are used to demonstrate this technique. Note that individuals received for mental health evaluations at the request of U.S. Courts are instructed, at the onset, that nothing they say or do during the evaluation is confidential and anything the author can find out about them could be included in a report sent to the referring court.

**CASE EXAMPLE 1**

Subject 1 was a 31-year-old African-American man referred for evaluation regarding competency to stand trial. The court requested an opinion as to, “Whether or not the defendant is in such condition of mind and memory as to be able to recall the events connected with the offenses with which he is charged so as to enable him to advise with counsel in a rational manner and to testify at the trial of his case if called upon to do so.” He was charged with armed bank robbery. He was diagnosed in 1991 with Lupus Erythematosus which he claimed resulted in significant memory problems. He also claimed a minor “stroke” in January 1994, for which he was hospitalized for 1 month. He noted having blurred vision and hearing loss following the “stroke.”

During this approximately 45-day inpatient evaluation, he remained generally friendly, cooperative, and polite. His speech was always coherent and relevant and his thinking appeared organized. He was dramatic in relating information about his background. He never displayed signs suggestive of psychosis. Medical evaluation found Systemic Lupus, hypertension, and sensorineural hearing loss of the left ear. CT of the head results were normal. There was no cause found for his claimed blurred vision nor was there objective evidence for history of stroke.

Observation suggested exaggeration of his physical complaints, as he complained of severe back pain but walked briskly without signs of distress immediately afterward. He consistently claimed no recollection of events surrounding the alleged offense, except he recalled from prosecution material that the male perpetrator was supposedly wearing women’s clothing.

Investigative material revealed that a male individual fitting the defendant’s description attempted to rob a bank while dressed in women’s clothing. This clothing was later found near the bank. Thirty-five questions were initially drafted using information from investigative reports. Each of these questions included the correct answer and a reasonably plausible alternative. He was instructed that “Authorities suggested a bank robbery occurred; please answer these questions based on what you can remember about the circumstances or what you can remember about allegations in investigative records.” He was able to answer six of the questions correctly by using logic alone or recalling it from a court hearing (e.g., What
was the race of the bank teller? "She must have been white as this was an all white town."); consequently, 29 questions were successfully administered (Appendix A). He correctly answered only 7 of 29 ($z = -2.6$, one-tailed; $p < 0.005$). These results suggested that such a performance would only occur less than 5 times out of 1000 by chance alone. Given the incongruence between his claimed memory loss and objective medical condition, inconsistencies in his subjective claims, significant motivation to feign, and these test results, it was concluded the subject actually had memory for events in question. After court testimony, he was found competent to stand trial.

CASE EXAMPLE 2

Subject 2 was a 47-year-old, left handed, Caucasian man referred for neuropsychological evaluation to address his competency to stand trial. He presented with pervasive, global, and transient memory problems which he claimed were a result of a cerebral vascular accident (CVA).

The CVA occurred after his arrest and indictment. He was charged with manufacture, possession, and distribution of methamphetamine. The court was concerned about the possibility of malingering memory loss but feared that legitimate amnesia may preclude the defendant from aiding in his own defense.

Medical records, including CT and MRI scans of the head, indicated he suffered an infarction in the medial aspect of the right occipital lobe, which extended laterally to the occipital horn of the right lateral ventricle and into the area of the internal capsule. The area of focus was consistent with a right posterior cerebral artery event. Doppler studies also revealed a complete occlusion of the right internal carotid artery just above the bifurcation into internal and external components. The subject reported having suffered two cardiac arrests, one possibly in 1991 and the second during the aforementioned CVA. Medical records mention nothing of cardiac arrests and specifically reveal that he denied history of heart disease when giving medical history to the neurologist at that time. There was no evidence of significant brain hypoxia beyond the ischemic event.

The subject claimed nearly total memory loss for his entire life and certainly for any events surrounding the alleged offenses. Neuropsychological test results ranged from mild to severe and implicated both cerebral hemispheres. There were inconsistencies in his performance when comparing test results with his behavior on the hospital ward. His global amnestic claims were not consistent with the right-sided focus of tissue destruction. In addition, other screening tests for negative response bias (Rey 15-item: Lezak, 1995; Dot Counting: Lezak, 1995; and FCTNV, Frederick et al., 1994) suggested less than optimal effort. A 21 item, forced-choice test of memory was developed using information from investigative material (Appendix B). He correctly answered only 6 of the 21 items ($z = -1.75$, one-tailed; $p = 0.04$). These findings suggested to the author that the defendant had enough memory to suppress his score to below random chance. Given his overall performance on tests of negative response bias, inconsistencies in neuropsychological test results, incongruency between claimed deficits and behaviors in the hospital, ample motivation to feign severe illness, and these test results, it was concluded that although he suffered legitimate cognitive compromise from his neurological condition, the condition was not severe enough to render him as amnestic as he claimed.

Recorded telephone conversations acquired after this conclusion between the subject and his girlfriend demonstrated fluent speech and good memory, problem solving skills, and decision making. He was considered to be malingering amnesia. After court testimony, he was found competent to stand trial.
CASE EXAMPLE 3

Subject 3 was a 25-year-old African-American man referred for evaluation regarding his competency to stand trial. The court was particularly concerned about his memory as the defendant had a history of professional boxing and was thought to possibly have dementia. He was charged with conspiracy to distribute cocaine. Throughout the early portion of the hospitalization, he would present himself as confused, cognitively dull, and as having deficits in memory. He repeatedly requested staff to repeat even the simplest of questions addressed to him.

He displayed deficits in remote memory as well. When angered to a moderate degree, however, he could comprehend and express himself well. His behavior on the ward was always organized and appeared purposeful. Neurological examination results were normal and the neurologist suggested he was malingering. Tests of intelligence placed his IQ in the low 60s. On the Wechsler Memory Scale-Revised (WMS–R; Wechsler, 1987), he achieved a General Memory Index below 50. Booklet Category Test (DeFilippis & McCampbell, 1979) results placed in the severely impaired range (99 errors). Other screening tests for negative response bias were equivocal but suggested less than optimal effort.

Twenty questions were created from the investigative material regarding events surrounding the alleged offense. The defendant rationalized or remembered the correct answer to 10 of these questions. Although below the desired number, the remaining 10 questions were administered (Appendix C), and he was forced to select between two answers for each. He correctly answered only 2 of these 10 questions ($z = -1.58$, one-tailed; $p = 0.057$). The small number of test items limited the strength of the test and the results were only suggestive of less than optimal effort. However, his overall performance on other test results, his clearly inconsistent behavior on the ward, neurological examination results, and abundant motivation to feign, strongly suggested he was malingering cognitive and memory deficits. Although considered to be malingering, it was communicated to the court that the defendant may indeed have some cognitive compromise which was difficult to accurately delineate because of poor cooperation. The court considered him competent to stand trial.

NORMATIVE SAMPLE CHARACTERISTICS AND PROCEDURE

In an effort to address the probability of specific test items used in these cases, the author administered the same items to a sample of 60 adults who had no prior knowledge of events in question. The sample consisted of individuals from the community who volunteered to participate in the study. Forty-seven percent of the sample were women and 53% men. Ages varied from 20 to 67 years, with a mean of 36 years. Each question was read to the subjects, they marked their answer on an answer sheet, and the correct answer was given. This procedure continued until all items from the case were administered. Subjects then totaled the number of correct answers.

Each of the three cases were administered in this manner. There was no significant difference between men and women’s total scores, $t(58) = 0.20$, two-tail, $p > 0.05$.

NORMATIVE SAMPLE RESULTS

Case 1

Case 1 consisted of 29 items (Appendix A), with a mean of 15.83 and $SD$ of 2.77. Scores ranged from 8 to 23. The distribution is basically symmetrical as demonstrated in Figure 1.
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Two scores fell below $z = -1.65$, and no scores fell below $z = -2.33$. Two cases out of 60 are just over 3% and less than what is expected given alpha of 0.05. Using the Siegel (1956) formula, the mean ($N = 60$) equaled a $z$ score of 0.31.

Item analysis for Case 1 found probabilities for correct responses to range from 0.20 to 0.82. Nine items fell within the 0.40 to 0.59 range. Mean probability was 0.544 with a $SD$ of 0.174. Figure 2 reveals the distribution to be relatively symmetrical.

**Case 2**

Case 2 consisted of 21 items (Appendix B), with a mean of 10.85 and $SD$ of 2.16. Scores ranged from 6 to 16 (Figure 3).

One score fell below $z = -1.65$, and no scores fell below $z = -2.33$. One score beyond a one tail critical level for alpha = 0.05 was less than 2% of the sample. The mean ($N = 60$) corresponded to a $z$ score of $-0.07$ with the Siegel formula.

Item analysis for Case 2 found probabilities for correct responses to range from 0.20 to 0.82. Nine items fell within the 0.40 to 0.59 range. Mean probability was 0.519 with a $SD$ of 0.167. As shown in Figure 4 the distribution is also predominantly symmetrical.

**Case 3**

Case 3 consisted of 10 items (Appendix C), with a mean of 5.53 and $SD$ of 1.55. Figure 5 demonstrates this distribution to be nicely symmetrical despite the small number of items.
One score fell below $z = -1.65$, and no scores fell below a $z$ score of $-2.33$. One score below $z = -1.65$ corresponded to $1.7\%$ of $60$. The $z$ score for the mean ($N = 60$) equaled $0.02$ based on the Siegel formula.

Item analysis for Case 3 found probabilities for correct responses to range from $0.32$ to $0.78$. Four of the 10 items fell within the $0.40$ to $0.59$ range. Mean probability was $0.554$ with a $SD$ of $0.152$. This distribution is also clustered around the mean (Fig. 6).

**DISCUSSION**

These sample results appear to be consistent with what is hypothesized about the binomial distribution even though the item answers vary in probability. The sample means for each case are either the same as the hypothesized mean or are in the positive direction. These results suggest the test procedure is rather robust and can handle variability in the probability of several items. Striking in these data is the finding that the greater probability varied rather evenly between correct and incorrect answers. Even with a test of only 10 items, the varied item probability had little practical affect on the test. This finding supports the belief that variability will occur randomly in this procedure and, therefore, have little significant effect on the overall test probability.

It is important to scrutinize each item to make sure the correct and alternate answers are reasonably plausible. As Frederick et al. (1995) emphasized, it is particularly important to make sure no items include a remotely plausible correct answer as it would unduly bias the test against the subject. Two items used on these cases had particularly poor probabilities that were biased in the negative direction. Item 16 on Case 1 produced a $0.20$ probability for
a correct answer. The item addressed how much money was requested on the robbery note with options of $50,000 or $100,000. There appears to be no rational basis for this probability beyond random variation.

Item 15 on Case 2 also produced a 0.20 probability of a correct answer. This item referenced the hiding place for a case in the car and gave the options of "glove box" or "under the seat." The correct answer was "glove box," but 80% of the sample apparently believed the more likely location was under the seat. These two items were the most negatively biased items, and even after analysis, the answers still seem reasonably plausible. The two most biased items in the positive direction each had probabilities of 0.82. Item 22 of Case 1 asked if the bank robber pointed a gun at the teller, with the correct answer being "No." Given the sensationalization of bank robberies in movies, it seems surprising that the sample produced so many "No" responses.

The other item, 21 of Case 2, requested the color of plastic bags found in a briefcase. Options were "Clear" and "Colored," with the correct answer "Clear." This outcome, in retrospect, does not appear surprising as most small plastic bags are indeed clear. Three of these four most "biased" items seem reasonably plausible despite the obtained probabilities. This finding, with the observation that the distribution of item probabilities appear quite symmetrical, suggest much of the variability is due to random chance. These items lend support for the robust nature of the procedure to take into account such random variability in item probability. Furthermore, it suggested no need to obtain a normative sample for each test when it is developed as long as the test developer scrutinized each item for reasonably plausible alternatives and attempted to stay away from incorrect answers which appear obviously more probable than the correct answer. These cautions should result in a test that is useful and not biased against the subject.

![Histogram frequency](image)

**FIGURE 5.** Frequency distribution of Case 3 total scores with normal curve superimposed (dots).

![Frequency distribution of Case 3 item probabilities](image)

**FIGURE 6.** Frequency distribution of Case 3 item probabilities.
A finding of $p < 0.05$ does not necessarily mean the individual is malingering memory deficit, and there is certainly nothing golden about the 0.05 level of significance. The result simply indicates that such a performance would occur by random chance alone only 5 times out of 100 occasions. Indeed, such a probability was demonstrated in the aforementioned normative sample.

Clearly, $p \leq 0.01$ is more remarkable. It remains possible, however, that the subject in question is the 1 out of 100 subjects. This issue also emphasizes the need to corroborate a perception of feigning or gross exaggeration with other information as test results should not be viewed "in a vacuum" as Larrabee (1992a, p. 262) noted. Proper diagnosis entails the appropriate synthesis of information from multiple data sources, especially in the forensic arena (Shapiro, 1991). For example, does the individual display any legitimate neurological compromise or psychopathology which could explain the amnesia? Do other test results also suggest malingering or symptom exaggeration? Is there significant motivation to feign? These issues are particularly difficult when the subject has a history of legitimate neurological compromise, which he or she may simply be embellishing for secondary gain. Certainly, one's behavior under direct and prolonged observation is vitally important. No one should be diagnosed as malingering simply from one test. An individual's overall contextual setting contributes greatly to an understanding of their motivation. As Rogers (1990a, 1990b) suggested, feigning mental illness can be conceptualized as an adaptive response to the environment. Furthermore, Frederick et al. (1995) noted there may be occasions of other psychogenic (i.e., nonconscious) motivation for such poor performances. Finally, the words of Cohen (1994) strike deeply into the statistical properties and common conclusions inherent with SVT. By finding that an occurrence may only occur by random chance alone in 5 cases out of 100 does not tacitly mean there is 95% probability that an individual is malingering memory impairment.

SVT appears to be helpful in correctly identifying feigned remote memory loss within the criminal forensic arena. As neuropsychologists are increasingly asked by criminal courts to assist in the judicial process, they need to apply what techniques are available to give reasoned and balanced opinions. Statistically based procedures, when used judiciously and in conjunction with multiple data sources, should improve the inherent weaknesses of clinical judgment alone (Dawes, Faust, & Meehl, 1989; Faust et al., 1988). SVT, when treated cautiously, can help these opinions remain within the realm of behavioral science rather than simply educated speculation.

REFERENCES


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APPENDIX A

Sample questions for Case 1

Some of the questions listed here were changed in order to maintain anonymity. (* denotes correct answer.)

Approximate Instructions Given

"Authorities suggested a bank robbery occurred; please answer these questions based on what you can remember about the circumstances or what you can remember about allegations in investigative records." (The subject knew he was accused of dressing as a woman to rob the bank.)

1. What date did it occur?
   A. January 16*
   B. January 7

Sample questions for Case 1

Some of the questions listed here were changed in order to maintain anonymity. (* denotes correct answer.)

Approximate Instructions Given

"Authorities suggested a bank robbery occurred; please answer these questions based on what you can remember about the circumstances or what you can remember about allegations in investigative records." (The subject knew he was accused of dressing as a woman to rob the bank.)

1. What date did it occur?
   A. January 16*
   B. January 7"
2. At what time?
   A. 12:30 p.m.
   B. 9:30 a.m.*

3. What was the perpetrator wearing?
   A. Dress
   B. Pants*

4. What type of hat did he wear?
   A. Felt
   B. Straw*

5. What was on the hat?
   A. Scarf*
   B. Flowers

6. The perpetrator wore what type of top?
   A. Sweater*
   B. Blouse

7. What color were the pants?
   A. Light
   B. Dark*

8. Did the person wear nail polish?
   A. Yes
   B. No*

9. What was to be used to carry the money?
   A. Purse*
   B. Paper bag

10. What color was the purse?
    A. Beige
    B. Black*

11. On which side of the bank was the teller window the perpetrator approached?
    A. Right*
    B. Left

12. What was the teller’s gender?
    A. Female*
    B. Male

13. What was the teller doing when the person approached?
    A. Rolling change
    B. Counting paper currency*

14. Did the robber speak to the teller?
    A. Yes*
    B. No

15. What did the robber say to the teller?
    A. Give me the money
    B. I want to see the manager*

16. The note asked for how much money?
    A. $50,000*
    B. $100,000

17. Did the note indicate specific denominations of money?
    A. Yes*
    B. No

18. From where was the note produced?
A. Pocket
B. Purse*

19. Was the note in an envelope?
   A. Yes*
   B. No

20. How many people saw the note?
   A. 1
   B. 2*

21. How did the teller react to the note?
   A. Panicked
   B. Confused*

22. Was a gun pointed at the teller?
   A. Yes
   B. No*

23. Was the gun fired?
   A. Yes
   B. No*

24. How many customers where in the bank?
   A. Only 1
   B. More than 1*

25. How did the perpetrator leave the bank?
   A. Walked*
   B. Ran

26. When was the clothing for the robbery allegedly purchased?
   A. 5 days before*
   B. The day before

27. Where did the perpetrator change clothes before the robbery?
   A. Bathroom of a gas station
   B. Bathroom of the courthouse*

28. Where were the clothes later found?
   A. In a trash can at the Post Office*
   B. In a trash can at the gas station

29. What was found with the clothing?
   A. Religious material*
   B. Daily newspaper

**APPENDIX B**

Sample questions for Case 2
Some of the questions listed here were changed in order to maintain anonymity.
(* denotes correct answer.)

Approximate Instructions Given
"Investigative records allege you of a drug crime; please answer these questions based on what you can remember of the circumstances or what you can remember about allegations in the investigative record."

1. You allegedly met James Smith through which person?
   A. Tommy*
   B. Martin
2. This person was known to sell what type of drugs?
   A. Exstacy
   B. Crank*

3. This person generally sold drugs to what type of people?
   A. Truck Drivers*
   B. Teenagers

4. Investigative material claims an agreement was made regarding what?
   A. Smith was to teach someone to cook methamphetamine*
   B. Someone was to teach Smith to cook methamphetamine

5. The teacher was to get how much money?
   A. $75,000
   B. $100,000*

6. Smith was told the source of supply was where?
   A. Texas and South Carolina*
   B. Louisiana and Georgia

7. You were released on how much bond after the arrest?
   A. $30,000
   B. $25,000*

8. You were initially arrested when?
   A. July
   B. May*

9. You were initially arrested in what state?
   A. Georgia*
   B. Florida

10. Why were you pulled over that day?
    A. Broken windshield*
    B. Speeding

11. When pulled over, which way were you traveling?
    A. Northbound
    B. Southbound*

12. The officer gave you what?
    A. Warning Citation*
    B. Verbal Warning

13. How many officers searched your vehicle?
    A. 1
    B. 2*

14. Where were you when the vehicle was searched?
    A. In the police car
    B. Standing in front of your vehicle*

15. The officer found a case in the vehicle where?
    A. Glove Box*
    B. Under the seat

16. What color was the case?
    A. Brown
    B. Black*

17. Did they find anything else?
    A. Yes*
    B. No

18. What was it that they found?
    A. Briefcase*
B. Brown paper sack

19. They found what inside the briefcase?
   A. Plastic containers
   B. Plastic Bags*

20. How many did they find?
    A. Four*
    B. Five

21. Of what type of plastic were they?
    A. Clear*
    B. Colored

APPENDIX C

Sample questions for Case 3
Some of the questions listed here were changed in order to maintain anonymity.
(* denotes correct answer.)

Approximate Instructions Given
"The indictment on this person alleged a cocaine charge. Please answer these questions based on what you can remember of the circumstances or what you remember of the allegations in investigative records."

1. The drug was allegedly in what form?
   A. Powder*
   B. Solid

2. Who allegedly introduced the undercover agents to you?
   A. Nolan
   B. Jarod*

3. The indictment listed how many sales to the undercover agent?
   A. 1
   B. 2*

4. The first alleged drug deal with the police occurred when?
   A. 1/18/91
   B. 3/21/91*

5. How many ounces were allegedly sold to the undercover agents during the first deal?
   A. 3
   B. 2*

6. What was the price of the cocaine during this alleged drug deal?
   A. $1,600
   B. $1,300*

7. The original meeting with police occurred where?
   A. Town View Homes
   B. Austin Homes*

8. When did the second alleged drug sale to undercover officers occur?
   A. 3/25/91*
   B. 2/23/91

9. Where did the police finally catch up you?
   A. Walmart
   B. Weigles Store*

10. Investigative reports allege your major drug connection to be whom?
    A. Joe*
    B. Bob