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Symptom validity testing of feigned amnesia for a mock crime

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Abstract

Perpetrators sometimes claim loss of memory for the crimes they have committed. For the neuropsychologist, the veracity of such crime-related amnesia is difficult to assess. The aim of the present study was to investigate whether Symptom Validity Testing (SVT) can be used to detect feigning of crime-related amnesia. Undergraduate students ($N = 39$) were instructed to commit a mock crime and asked to feign complete amnesia for the event. Subsequently, they were given 25 forced-choice items about the “crime” that were always followed by the correct answer and an equally plausible alternative. To counteract chance performance, test items were intermixed with 25 bogus questions that contained two equally plausible alternatives. Results show that a majority of participants (59%) scored below chance level on the critical items of the SVT. In addition, debriefing interviews showed that understanding the rationale behind the SVT was not related to chance performance. SVT procedures therefore might be helpful in identifying feigned crime-related amnesia.

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Forensic neuropsychologists are sometimes confronted with cases in which defendants claim amnesia for their offences. Such claims of crime-related amnesia are relatively common. By and large, it seems that about 20–30% of individuals who commit violent crimes report no recollections of the pertinent event (see for a review, Cima, Merckelbach, Nijman, Knauer,

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& Hollnack, 2002). Although crime-related amnesia is common in cases involving extreme violence, it has also been found in individuals charged with non-violent crimes such as fraud (e.g., Kopelman, Green, Guinan, Lewis, & Stanhope, 1994).

Amnesia for criminal offences may be genuine. Some crimes, in particular those involving extreme violence, are committed by individuals intoxicated by alcohol and/or drugs. Moreover, criminal acts are often committed in a state of high arousal, that is, during extreme rage or anger. There is evidence that excessive alcohol and/or drug use as well as extreme emotions may cause crime-related amnesia (Kopelman, 2002). However, in order to obstruct police investigation and/or to reduce responsibility for their acts, perpetrators may also simulate amnesia for their offences (Cima et al., 2002). Although older studies suggested that about 20% of criminals with “no recollections” of their offences are feigning their memory loss (Hopwood & Snell, 1933), some authors have argued that the true rate of malingering in this population is much higher. According to Cima et al. (2002) and Porter, Birt, Yuille, and Hervé (2001), many individuals claiming crime-related amnesia because of intoxication or high arousal are actually simulating their loss of memory.

How should the forensic neuropsychologist proceed when he or she is asked to evaluate the crime-related amnesia of a defendant? One possibility would be to administer well validated self-report scales that measure the degree to which a person displays a tendency to malingering symptoms (e.g., the SIMS; Merckelbach & Smith, 2003; Smith & Burger, 1997). Such scales, however, only provide the neuropsychologist with indirect information regarding the veracity of crime-related amnesia. Symptom Validity Testing (SVT) might be a more direct procedure. SVT procedures were originally developed to detect malingering of deafness (Pankratz, 1979) and cognitive dysfunction (Binder & Pankratz, 1987). More recently, SVT has been proposed as a tool for assessing the veracity of memory loss in individuals who claimed to have no recollections of crimes they had committed (e.g., Denney, 1996; Frederick, Carter, & Powel, 1995). Briefly, SVT entails a forced-choice procedure in which defendants are asked a series of questions about the details of the crime. For each question, the defendant must choose between two equally plausible answers one of which is correct and the other is incorrect. Genuine amnesia for a crime should result in random performance (i.e., correct and incorrect answers are selected approximately equally often). Performance that is significantly below chance (i.e., the incorrect answer is chosen significantly more often than the correct answer) indicates deliberate avoidance of correct answers, and, hence, intact memory for the crime. Significantly below chance performance during a SVT procedure thus provides strong evidence for malingering of crime-related amnesia. While Frederick et al. (1995) and Denney (1996) employed SVT to identify malingering of memory loss in perpetrators of a crime, Merckelbach, Hauer, and Rassin (2002) tested the usefulness of this procedure in a simulation study. It has been argued that SVT procedures—especially in a neuropsychological context—have limited value because intelligent malingerers would easily understand the rationale behind these procedures (Rogers, sHarrell, & Liff, 1993). Merckelbach et al. (2002) therefore investigated the usefulness of SVT in detecting feigned amnesia for a mock crime in a sample of undergraduate students. Twenty students were asked to “steal” some money from a bar and were instructed to feign complete amnesia for this event. Next, they had to answer 15 forced-choice questions that always contained the correct answer and an equally plausible alternative. It was found that approximately 40% of the participants performed significantly below chance on this SVT procedure.

In the present study, the procedure used by Merckelbach et al. (2002) was modified. The following amendments were made. First, we asked research participants to steal an erotic magazine instead of money. Theft of such a magazine would probably be more embarrassing for participants than stealing some money. Second, to make the SVT procedure less transparent, critical questions were mixed with bogus items, that is, questions that have no correct answer. We anticipated that by introducing these bogus items, participants would find it difficult to calibrate their performance to chance baseline. Third, we increased the number of critical questions. We expected that this would make it more difficult for participants to answer in a random fashion. Fourth, at the end of the experiment, participants were asked what kind of strategy they had used to feign amnesia for the crime. It was expected that the refined SVT would yield a higher percentage of participants with SVT scores significantly below chance level than the original procedure (i.e., limited number of questions and no bogus items).

1. Method

1.1. Participants

Participants were 39 undergraduate psychology students (5 men) who agreed to take part in a simulation study in return for a small compensation. Mean age was 20 years (S.D. = 4.8; range: 18–48 years).

1.2. Procedure

Participants were given written instructions to enter a bar located in the psychology building of the University of Maastricht. They were not familiar with the bar and there were no other people in the bar. Participants were asked to stay for 5 min in the bar. At the end of that period they had to steal an erotic magazine (i.e., the Playboy) from an envelope that lay on top of one of the tables in the bar. Because of ethical reasons they were told that this was a mock crime. Participants were instructed to return to the lab and to imagine that they were suspects in a criminal investigation. More specifically, they were asked to behave in such a way as to convince others that they had no recollections of visiting the bar whatsoever.

1.3. Symptom Validity Testing

After their return from the bar, participants were given a SVT that consisted of 25 critical and 25 bogus two-choice items. Using a Doob and Kirshenbaum (1973) pilot procedure, the 25 critical items had been selected from a larger pool of 40 items. During the pilot, these 40 items were given to 10 naïve undergraduates who were asked to select the most plausible alternative. Next, mean binomial probabilities were calculated and items with probabilities of correct answers below .3 or above .7 were removed from the set. This resulted in 25 unbiased items pertaining to the magazine that had been stolen (“the crime”) and the details of the bar interior (“the crime scene”). For each item, participants had to choose between two answer options. Typical examples are “The magazine that was stolen was (1) the Penthouse or (2) the

Playboy” and “in the bar, there is a huge mirror (1) yes or (2) no.” For each participant, correct items were summed to obtain a total SVT score. The 25 bogus items were used to counteract random performance during the SVT procedure. These items had to do with the bar, but did have two equally plausible alternatives. Typical examples are “The total square meters of the bar is (1) 56 or (2) 58” and “The temperature in the bar is (1) 21 °C or (2) 22 °C.” The bogus items were completely intermixed with the critical items.

Following completion of the SVT, participants were asked to stop feigning amnesia. Next, they were given the 25 critical SVT items, but this time participants had to respond honestly. Answer options now not only included correct and incorrect alternatives, but also a “don’t know” option. Correct answers were summed to determine true memory levels. Participants were also requested to write down what they thought was the purpose of the experiment and which strategy they had used to feign loss of memory for the theft. Finally, they were fully debriefed (i.e., they were informed about the aim of the study and the idea behind the SVT), paid, and asked not to discuss the experiment with their fellow students.

2. Results

Table 1 shows the distribution of total SVT scores. Following the binomial formula presented by Spiegel and Castellan (1988, p. 43), 23 participants (59%) had total SVT scores significantly below chance (i.e., total SVT < 8; $P < .05$ two tailed) indicating strategic avoidance of correct alternatives, while 10 participants (26%) performed in the random range. The remaining six participants had scores significantly above chance level (total SVT > 17) suggesting that total amnesia was not feigned.

Raw scores of those participants who showed performance in the random range were subjected to runs tests in order to determine whether their sequence of answers followed a truly random pattern (see, Cliffe, 1992, for a similar procedure). None of the 10 participants had a pattern that departed from random behavior.

The distribution of true memory performance scores can also be found in Table 1. There were no scores in the significantly below-chance range. Accordingly, mean SVT scores were substantially lower than true memory scores, means being 8.3 (S.D. = 7.1) and 19.5 (S.D. = 2.7), respectively [$t(38) = 8.2$, $P < .001$].

When asked about the purpose of the experiment, 11 participants (28%) evidenced some *post hoc* understanding of the rationale behind the SVT. One of them had a SVT performance significantly above chance level, four scored in the random range, and the remaining six had scores significantly below chance level. Thus, although some participants knew that in order to

Table 1
Distribution of total scores on the 25-item SVT and the 25-item True Memory Test ($N = 39$)

Items correct	SVT	True Memory
<8	23 (59)	0 (0)
8–17	10 (26)	13 (33)
>17	6 (15)	26 (67)

feign amnesia in a convincing way random responses should be given during the SVT procedure, more than half of them nonetheless performed significantly below chance. When asked about the strategy they had used to feign amnesia, 19 of the 23 participants with SVT scores significantly below chance level said that they deliberately had given incorrect answers to most questions. Four of these 19 participants had some *post hoc* knowledge about the concept behind the SVT procedure, but decided to select incorrect responses on most items. Two other participants performing significantly below chance indicated they had tried to answer the questions in a random fashion. The two remaining participants with scores significantly below chance level said they had not used a specific strategy. Seven of the 10 participants with SVT scores in the random range indicated they had intentionally answered the questions of the SVT randomly. The other three participants with random scores had not used a strategy. Three of the six participants with scores significantly above chance level said they had tried to answer the questions in a random way. The other three participants with such scores indicated they had not used a strategy.

3. Discussion

The present simulation study tested to what degree intelligent people can defeat a SVT procedure when they are asked to feign amnesia for a mock crime. Our results show that a majority of undergraduate participants (59%) perform significantly below chance, which indicates that they intentionally gave wrong responses. Apparently, our SVT procedure constitutes a relatively sensitive challenge test, even in an intelligent population. The objective of our study was to refine the SVT procedure employed by Merckelbach et al. (2002). Although the two procedures were not compared in one study, the amendments we made seem to be effective. While Merckelbach and colleagues found that 40% of their undergraduate participants were correctly identified by the SVT as feigning amnesia, the present study obtained a 59% hit.

Some forensic neuropsychologists have argued that SVT procedures have limited value in detecting malingering of cognitive dysfunction because of their transparency (e.g., Rogers et al., 1993). Intelligent malingerers might easily recognize the rationale behind the SVT and therefore would give random responses. This line of reasoning is based on the idea that people have reasonable statistical intuitions. Our finding that nearly 60% of a group of undergraduate psychology students, most of them familiar with basic statistical concepts, perform significantly below chance on a SVT, shows that even intelligent people have incorrect statistical notions (see Kahneman & Tversky, 1982, for a similar case in point). The results of the present study are in line with anecdotal reports about the efficacy of SVT in detecting feigning of crime-related amnesia. Denney (1996) used a SVT procedure in three perpetrators who claimed memory loss for the crime they had committed. The perpetrators all had significantly below chance performance on a series of forced-choice questions pertaining to the criminal offence. SVT can therefore be regarded as a promising tool to assess the veracity of memory loss in defendants who claim crime-related amnesia. The present study suggests that SVT procedures consisting of a large series of questions including bogus items may be more effective in identifying feigning of crime-related amnesia than procedures involving a limited number of items and no bogus items. It should be noted here that our results may have limited value in assessing actual criminals feigning amnesia. In forensic practice, SVT

is only informative when defendants who claim crime-related amnesia perform significantly below chance levels. In these cases, strategic avoidance of giving correct responses indicates knowledge of the criminal event. Given that 26% of our research participants feigning amnesia were able to defeat the SVT procedure by providing random responses, perpetrators who perform at chance levels may still feign their memory loss. In other words, significantly below chance performance constitutes diagnostically relevant information, but chance performance does not, which means that the SVT is a challenge test.

One could argue that the present study does have two potential limitations. We instructed the participants to commit a mock crime— theft of an erotic magazine—that may have little ecological validity. Indeed, in the literature, most cases of feigned crime-related amnesia pertain to violent crimes involving high levels of arousal in combination with alcohol or drug use (cf. Cima et al., 2002). On the other hand, crime-related amnesia has also been reported in cases involving non-violent offences such as fraud (Kopelman et al., 1994). In addition, most of our research participants (34 out of 39 participants) were female. It is well documented that most criminals, especially violent ones, are male (cf. Bartol, 1998).

Summing up, the present study shows that SVT techniques may be of some value in determining the veracity of crime-related amnesia. The present study used an intelligent sample. It would perhaps be of interest to study the efficacy of SVT to detect feigning of amnesia in a sample randomly drawn from the community. Conceivably, the percentage of participants who would be able to defeat the SVT would be much smaller than in the present study.

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