

University of Essex
Department of Psychology
PS902: Neuropsychology of memory

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The assessment of malingering in claims of retrograde and anterograde amnesia.

Registration number: 1200681

Question 2.

Essay Mark: 75%

Pros: *Extensive literature coverage; the majority of citations are not from the lectures. Good structure. Analytical and critical points presented.*

Cons: *One paragraph argue that malingering tests are useless for neuropsychological measures, but it is not explained why.*

Minor cons:

One abbreviation is not defined (MMPI-2).

09/11/2012

Word count: 1998

Clinicians sometimes encounter patients they suspect are feigning their symptoms in order to achieve external gains. Such simulation or exaggeration of symptoms is usually associated with financial gain (Binder & Rohling, 1996). It may also occur if the patient is faced with criminal charges; in 1994 29% of all criminals sentenced to life imprisonment claimed amnesia at their trials and later some admitted feigning their memory loss (Pyszora, Barker, & Kopelman, 2003).

If a patient claims to suffer from retrograde amnesia (unable to recall past life prior to onset of condition) and anterograde amnesia (unable to learn new information), despite brain scans revealing no injury, this is by itself no indication of malingering. The injury sustained may simply have gone undetected, or the patient may be suffering from amnesia for psychological reasons such as trauma or stress, known as functional amnesia. Tests for anterograde amnesia are plentiful, and there also exists several tests specifically designed to detect malingering. For retrograde amnesia, fewer tests exist and malingering is harder to detect.

Some tests are available that are specifically aimed at detecting malingering in patients feigning injury symptoms. Such tests are referred to as Symptom Validity Tests (SVT) and often involve chance. Simulators tend to exaggerate their symptoms and often perform below chance, while genuine brain injury patients perform at chance level or above. One such test is the Test of Memory Malingering (TOMM), which aims to detect malingering without giving the patients cues to the nature of the test (Tombaugh, 1997). Another is the

Word Memory Test (WMT), which asserts verbal memory using pair-word recognition tasks, as well as consistency with delayed recognition tasks (Green, Lees-Haley, & Allen, 2002). Green (2007) argued that the WMT is the preferred SVT for detecting malingering, but Greiffenstein, Greve, Bianchini and Baker (2008) refuted this claim and showed that both the WMT and the TOMM are equally good indicators of malingering. However, Teichner and Wagner (2004) argue that the TOMM is only a useful measure for detecting malingering if dementia is ruled out, as the test is sensitive to the cognitive dysfunction associated with dementia. This was illustrated by Staniloiu and Markowitsch (2012) who reported a patient that scored below chance on some malingering detection trials, but the authors attributed this to global cognitive deterioration or that the patient did not understand the instructions.

The MMPI-2 Fake Bad Scale (FBS) is a true/false statement test sensitive to paradoxical claims and it may assess if a patient is exaggerating their responses (Lees-Haley, English, & Glenn, 1991). A meta-analysis by Nelson, Parsons, Grote, Smith, and Sinsung II (2006) concluded that the FBS is an adequate measure of malingering detection. A study by Hashish, Yossef, Moustafa, Elemi and Ali (2011) further compared the FBS with other measurements of malingering in head injury claims and found that the FBS is the most specific scale for detecting malingerers. However, Meyers and Volbrecht (2003) argue that the best malingering detection tests are those that can perform double-duties, meaning the tests can also assess patients with genuine neurological impairments. They argue that tests such as the Forced Choice Test (Hiscock & Hiscock, 1989) and the Portland Digit Recognition Choice Test (Binder, 1993), both of which are tests that are aimed to detect malingering, are otherwise useless for neuropsychological evaluations. McCaffrey and Weber (1999) argue

that while malingering assessment is still a somewhat inaccurate science, a combination of measurements is best used to assess malingering in patients, especially if the patient has potential external gains by simulating.

As malingering involves deception, some neuro-imaging studies suggest that fMRIs may aid in malingering detection: Spence, Hunter, Farrow, Green, Leung, Hughes and Ganesan (2004) found that deception depend on activation of key brain structures such as the ventrolateral prefrontal cortex and the dorsolateral prefrontal cortex. Browndyke, Paskavitz, Sweet, Cohen, Tucker, Welsh-Boomer, Burke and Schmechel (2008) also found that on tests such as TOMM deception was associated with increased brain activity and slower response time. This is similar to the results found by van Hooff, Sargeant, Foster and Schmand (2009) where simulators show slower and more variable reaction times on a memory task. However, brain-imaging measures cannot establish with certainty if malingering is occurring as mediating factors may be at play; impaired executive control as a result of psychological stress is causally linked to dysfunctional autobiographical retrieval (Fujiwara, Brand, Kracht, Kessler, Diebel, Netz, & Markowitsch, 2008; Kopelman, 2000).

Heaver and Hutton (2010) measured pupil size during a memory task and found that during the recognition stage the pupil was larger when old items were presented compared to new items. As all participants were feigning amnesia, the authors argue that pupil size measurement may be an indicator of malingering as it is an unconscious action. However, as

this study did not compare the results with brain injured patients it is not clear if this effect prevails in genuine amnesia cases.

Suspicion of malingering with anterograde amnesia usually involves a patient scoring below chance on forced choice tests (Jelicic, Merckelbach, & Bergen, 2004) or below the baseline of patients with amnesia as a result of acquired brain injury, called organic amnesia (Greiffenstein, Baker, & Gola, 1994). As anterograde amnesia is the inability to remember new information a large variety of tests are available.

With the help of an insurance company Greiffenstein et al. (1994) identified probable malingering patients and compared their results with objectively brain-injured patients on a variety of tests. They found that the traditional Wechsler Memory Scale (Wechsler, 1945) and its revised edition were unable to detect differences between malingering patients and brain-injured patients. In contrast, the Rey Auditory Verbal Learning Test (AVLT; Invik, Malec, Tangalos, Peterson, Kokmen, & Kurland, 1990) displayed significant differences between malingering and brain-injured patients on free recall, delayed recall, and recognition, with malingering patients performing poorer by comparison. The AVLT is a five-trial learning procedure where participants read a list of 15 words followed by free recall. Subsequently a second word list is read and recalled before finally the initial list is recalled again, which allows for a measure of interference.

Greiffenstein et al. (1994) also conducted a series of other tests: Rey's Word Recognition List (Lezak, Howieson, & Loring, 2004) involves recognising previously presented words; Rey's 15-item Memory Test (Lezak et al., 2004) has the participant drawing symbols from memory; the Portland Digit Recognition Test (Binder, 1993) involves remembering words through different trials of backwards counting; and the Reliable Digit Span is serial recall tasks forward and backwards. On all of these tests it was found that suspected malingerers scored poorer than brain injured patients. To assist clinicians in assessing malingering in patients, Greiffenstein et al. (1994) suggested a conservative rule of being suspicious when performance was 1.3 standard deviations below an objective brain injury baseline. Nevertheless, they warned that this included a 10% chance of false negatives.

Greiffenstein et al. (1994) warned that there are third variables that account for poor performance. Previous neurological conditions such as being in a coma or suffering from brain haemorrhaging can reduce cognitive performance (Schretlen, Brandt, Krafft, & Van Gorp, 1991). Another complication is that some patients may exist with actual brain damage while simultaneously exercising malingering. However, this phenomenon is incredibly rare: only 9% of brain injured patients perform worse than poor-performing malingering patients (Binder, 1993).

Hanley, Baker and Ledson (1999) found that the coin-in-the-hand task (Kapur, 1994) is a good indicator of malingering in amnesia patients. During this task participants briefly observe which hand is holding a coin. They are then asked to count backwards from 10

before they are asked which hand the coin was in. It was found that organic amnesiacs score excellent on this task, while simulators score only at chance level or below. Another test used was the distraction/no distraction task (Baker, Hanley, Jackson, Kimmance, & Slade, 1993) where participants read words from cards, followed by either a silent pause or backwards counting. Finally, participants are asked to recall the word items based on semantic cues. Hanley et al. (1999) found that simulators perform poorly compared to controls and organic amnesiacs on this task.

A more implicit measure of malingering is to see if the patient shows the usual primacy and recency effect in free recall. Wiggins & Brandt (1988) found that patients with genuine amnesia will not show a primacy effect while simulators do. Such indicators can be useful as the results are difficult for malingerers to fake.

It is more problematic to assert whether a patient is feigning retrograde amnesia as this involves loss of memory prior to the onset of the condition. The variables in question are therefore largely out of the examiner's control. For this reason there are relatively few tests that show promise of malingering detection within retrograde amnesia assessment. Kapur (1999) argue that this is because retrograde amnesia is less frequently reported by patients compared to anterograde amnesia, and for this same reason there is also little research on the topic. The difficulty in detecting malingering is further convoluted by the possibility of unconscious (or hysterical) malingering, where the patient in a sense is self-sabotaging his own performance without realising it (Ross, 2000).

Tests that aim to specifically test retrograde amnesia with malingering in mind are rare. Jenkins (2009, cited in Jenkins, Kapur, & Kopelman, 2009) is one of few studies to compare performance between brain injured patients, controls, and instructed malingerers on retrograde amnesia. Among the tests used was the Autobiographical Memory Interview (AMI), which uses samples of personal semantic memories across the lifespan, such as information from schooldays (Kopelman, Wilson, & Baddeley, 1989). Another test was the dead/alive test, which is a test of recognising whether a famous person is still alive or dead, and if the participant knows the circumstances of the death (Kapur, Ellison, Smith, McLellan, & Burrows, 1992). Jenkins (2009) found that malingerers typically scored lower on both the AMI and the dead/alive test compared to brain injured patients. This suggests that malingerers can be detected using these two tasks, though one aspect that has not been investigated is whether malingerers will score differently than patients with functional retrograde amnesia on these tasks.

There exist other tests designed to assess retrograde amnesia, such as the Famous Events Tests (Leplow & Dierks, 1997, cited in Fujiwara et al., 2008), which involve recall and recognition of public news events. However, few tests have been used in the context of malingering retrograde amnesia patients. Even if strong suspicions occur it is difficult to make accurate conclusions without patient confessions, which are rare. Fujiwara et al. (2008) tested five patients on a series of memory tests and strongly suspected that one of the patients were simulating functional retrograde amnesia, but was unable to conclude that this was so without the patient's confession. Their studies suggested that patients with

retrograde amnesia may also perform poorly on theory of mind tasks, which they suggest may be linked to poor autobiographical memory recall. Jenkins et al. (2009) argue that more research is needed on standardised measures to distinguish performances between organic, functional, and malingering amnesia before malingering can be reliably detected in retrograde amnesiacs.

To summarise, a wide variety of tests are available to assess malingering if a patient claims anterograde amnesia. Performance worse than chance or below the baseline of organic amnesiacs is cause for suspicion of malingering, especially if factors such as dementia and reduced cognitive functioning are ruled out. Malingering in retrograde amnesia is relatively harder to assess, but there are tests available and trends suggests that simulators perform worse than patients with organic amnesia. There are also SVTs available that are specifically designed to test malingering, such as the TOMM. The best way to investigate malingering is to use a combination of tests and see if the patient reliably scores below chance or the organic amnesia baseline across the tests. If so this is strong reason to suspect the patient is feigning. Ultimately, however, one cannot say with absolute certainty that the patient is simulating without a confession.

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