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## The Detection of Simulated Malingering Using a Computerized Priming Test

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*A word completion priming test was used to differentiate between normal student control subjects and students instructed to malingering. Controls (n = 60) were instructed to do their best, while malingering subjects (n = 60) were instructed to fake a memory deficit for credit and possible financial compensation. Subjects initially rated and completed stems for words that had at least 10 possible completions. Thirty minutes later, subjects rated and completed stems for words that were either uniquely defined by the stem or could only be completed with a variation of the word. Simulated malingerers and controls differed significantly on response latencies (time to produce rated words—time to produce baseline words, 10 second time limit) and priming scores. Discriminant function analyses showed that as high as 92% of the controls could be correctly identified, and 73% of the malingerers could be correctly identified. These results indicate that priming tests can be used in the detection of malingering. © 1997 National Academy of Neuropsychology*

The role of neuropsychologists has increased in the assessment and after care of individuals experiencing emotional and/or cognitive impairments following head injury. At times the task facing the neuropsychologist can be complicated by the possibility that the person is malingering or exaggerating their symptoms. To malingering is to invent or exaggerate symptoms in response to “external incentives,” such as financial compensation (American Psychiatric Association, 1987). The neuropsychologist faces a heavy responsibility when making a decision about whether or not a patient is malingering. If a person is inaccurately classified as a malingerer, services may be withheld from someone truly needing services. On the other hand, for someone malingering, but not classified as malingering, inappropriate services and financial compensation may be provided. Consequently, neuropsychologists have become actively involved in the development of instruments to enhance the accuracy in determining if someone is or is not malingering.

Tests that have been used to detect malingering of memory impairment include the Wechsler Adult Intelligence Scale-Revised (Rawling & Brooks, 1990), Wechsler Memory Scale (Rawling & Brooks, 1990), Portland Digit Recognition Test (Binder, 1993), Rey Auditory Verbal Learning Test (Bernard, 1990, 1991), and the Rey 15-item visual memory

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test (Bernard & Fowler, 1990; Lee, Loring, & Martin, 1992; Schretlen, Brandt, Krafft, & Van Gorp, 1991). The most commonly used tests in the detection of malingering are forced choice recognition tests (Binder, 1990; Frederick & Foster, 1991; Hiscock & Hiscock, 1989; Pankratz, 1983). The rationale underlying the use of the forced choice recognition test is that chance performance is 50% correct. It follows that anyone who scores significantly worse than chance is malingering (Binder, 1990; Pankratz, 1983). Neuropsychologists have also used empirically based "cut-off scores" on forced choice recognition tests to separate malingerers from individuals having genuine deficits after head injury. Unfortunately, none of these tests achieve complete accuracy. Thus, tests that can complement the forced choice paradigm and other previously used measures by enhancing classification accuracy may be of great value to the neuropsychologist assessing the possibility of malingering.

One test that might be of value because performance is counterintuitive to what the general layperson would expect is word stem priming. Priming, a form of implicit memory, occurs when the response to stimulus material is modified by its prior presentation, and this modification can occur without the explicit knowledge of the prior presentation (Schacter, 1987; Squire, 1986, 1987). For example, a subject is induced to study a set of words without being aware that later they will be presented with a word stem and asked to respond with the first word that comes to mind. Priming is demonstrated when the subject responds with a previously studied word, and the subject may or may not consciously remember having studied the word. Amnesic patients perform normally on this task when they are instructed to complete word stems with the first word that pops into mind, yet are severely impaired when asked to recall the words previously studied (Graf, Squire, & Mandler, 1984).

Priming effects have been previously investigated in normal controls and subjects instructed to simulate a memory deficit (Wiggins & Brandt, 1988). Simulators and control subjects exhibited similar priming effects on an immediate word stem completion task. This finding seems somewhat surprising because malingerers would not be expected to know that amnesic patients perform at normal levels on priming tasks, and therefore, they should perform more poorly than control subjects. Indeed, this was the case in a previous study investigating the characteristics of posthypnotic amnesia. It was found that simulators of posthypnotic amnesia performed significantly poorer on a priming type task than control subjects (Williamsen, Johnson, & Eriksen, 1965). The present study further examines the effect of priming in a word stem completion task in subjects simulating malingering and in normal control subjects. The word stem completion tasks used in this study were chosen because normals and amnesic patients have been previously reported to demonstrate similar levels of priming on both tasks (Squire, Shimamura, & Graf, 1987).

Despite Wiggins and Brandt's (1988) failure to detect poor performance on an immediate priming test in subjects instructed to malingering, it was predicted that the malingerers in the present study would demonstrate lower priming scores than control subjects. This prediction was based on the differences in the tasks used, the instructions given to subjects, and the previous report of impaired priming by simulators of posthypnotic amnesia (Williamsen et al., 1965). Additionally, in the present study the latency to produce a word stem completion was measured. It was further predicted that subjects instructed to simulate malingering would show longer response latencies for primed words than control subjects. Specifically, malingerers will likely recognize that some of the word stem completions they are producing were previously presented words. As a result, subjects instructed to malingering may interpret the task as a memory test and attempt to produce new stem completions. The production of new stem completions should increase the subject's response latency. In the initial priming task the subjects can produce new stem completions (e.g., for the rated word MOTEL the stem MOT has at least 10 possible completions), but in the second priming task each stem can be completed with only a single word (e.g., for the rated word JUICE the stem JUI has no other

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