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# Detecting malingered performance on the Wechsler Adult Intelligence Scale Validation of Mittenberg's approach in traumatic brain injury

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## Abstract

This study assesses the effectiveness of the Wechsler Adult Intelligence Scale (WAIS) performance validity markers devised by Mittenberg et al. [Prof. Psychol.: Res. Pract. 26 (1995) 491] in the detection of malingered neurocognitive dysfunction (MND). Subjects were 65 traumatic brain injury (TBI) patients referred for neuropsychological evaluation. Twenty-eight met the Slick et al. [Clin. Neuropsychol. 13 (1999) 545] criteria for at least probable MND. The control group was comprised of 37 patients without external incentive and who thus did not meet the Slick et al. criteria. All subjects completed the Wechsler Adult Intelligence Scale-Revised (WAIS-R or WAIS-III). The discriminant function score (DFS) and the vocabulary–digit span (VDS) difference score were calculated and sensitivity, specificity, and predictive power were examined for several cut-offs for each marker individually and the two combined. Classification accuracy for the DFS was acceptable and better than for VDS. The use of the two markers in combination resulted in no incremental increase in classification accuracy. Issues related to the clinical application of these techniques are discussed.

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*Keywords:* Malingering; Response bias; WAIS; TBI

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## 1. Introduction

The neuropsychological examination may be the primary means of documenting the effects of subtle neurological insult (e.g., mild traumatic brain injury [TBI], neurotoxic exposure) in support of legal claims for financial compensation (Guilmette, Hart, & Guiliano, 1993). In circumstances in which there is potential to gain from being impaired or disabled (e.g., workers compensation, personal injury litigation), patients may intentionally produce or exaggerate physical or psychological symptoms (i.e., malingering; Binder, 1993). Due to their dependence on patient cooperation and motivation, traditional neuropsychological measures are particularly vulnerable to malingering (Beetar & Williams, 1995; Heubrock & Petermann, 1998). Further, the clinician's ability to detect malingered performance using standard clinical measures in the absence of specialized indicators is poor (Faust, Hart, Guilmette, & Arkes, 1978; Heaton, Smith, Lehman, & Vogt, 1978). Because of these limitations, Mittenberg, Rotholz, Russell, and Heilbronner (1996) argued that neuropsychologists must go beyond basic clinical judgement by developing standardized and validated methods of pattern recognition for the detection of malingered performance.

It is now recognized that the formal evaluation of validity is a requisite component of neuropsychological evaluations conducted in a the medico–legal context. Toward this end, an array of techniques (including forced-choice Symptom Validity Tests [SVT]) have been designed and developed for the sole purpose of identifying invalid performance (for a review of many of these procedures, see Bianchini, Mathias, & Greve, 2001). However, the effectiveness of these specialized techniques may be subverted by the coaching of plaintiffs (for a case of documented coaching, see Youngjohn, 1995). Therefore, greater emphasis is being placed on the neuropsychologists' standard clinical procedures and associated pattern analyses, which are potentially less transparent and therefore less susceptible to coaching. A further advantage of developing these response validity markers for specific standard clinical tests is that they provide direct evidence of invalid performance on a given test thereby lessening the degree of inference required when the performance validity data come only from a few specialized tests. Further, they increase the amount of data concerning performance validity without increasing testing time. The use of standardized clinical measures in this way is also valuable when questions arise about the validity of a patient's performance outside a medico–legal setting when specialized tests may not have been administered.

The Wechsler Adult Intelligence Scale (WAIS) is probably the single most widely used test by psychologists evaluating cognitive performance (Guilmette, Faust, Hart, & Arkes, 1990) and a variety of performance validity markers have been devised for this instrument (see Axelrod & Rawlings, 1999; Mittenberg, Theroux-Fichera, Zielinski, & Heilbronner, 1995, for discussions of some of these methods). One of the most successful techniques for identifying invalid performance with the WAIS was devised by Mittenberg et al. (1995) and has two components that can be used independently. One was empirically derived using discriminant function analysis. The other was the theoretically based vocabulary–digit span (VDS) age-corrected scaled score difference. The base rates for these two techniques were approximately 30% in two samples of persons seeking disability compensation or vocational rehabilitation (Williams & Cartlin, 1999). Axelrod and Rawlings (1999) found that among the three procedures for identifying invalid Wechsler Adult Intelligence Scale-Revised (WAIS-R) performance they

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