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The unexamined lie is a lie worth fibbing Neuropsychological malingering and the Word Memory Test[☆]

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1. Introduction

Discussing neuropsychological malingering is a little like debating pornography; most don't feel good about it, some see it as a necessary evil while others wish it would go away. Adams' commentary on the "current wasteful malingering craze" (Adams, 2000, p. 301) is typical. The rebuttal is found in some surprising information that may elevate such tests out of a whispering gallery into a realm of higher appreciation. In fact, the inclusion of effort testing in the standard battery may force reexamination of many cherished brain-behavior relationships. In particular, using a large data set, Rohling, Green, Allen, and Lees-Haley (2000) showed that approximately 50% of the variance in a neuropsychological battery is explained by effort and cooperation, rather than by brain injury. It is difficult to argue that any variable explaining one half of battery variance is a "wasteful" preoccupation.

APA's general ethical principles in forensic assessments have not specifically addressed the use of specialized tests for malingering, stating in principle 7.02 only that:

Psychologists' forensic assessments, recommendations, and reports are based on information and techniques (including personal interviews of the individual, when appropriate) sufficient to provide appropriate substantiation for their findings (American Psychological Association, 1990).

However, Loring (1995) suggested a basic "standard of care" in a forensic examination: "malingering or deficit exaggeration must be specifically addressed to support either a

[☆] Apologies to Henry David Thoreau.

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conclusion of faking bad or putting forth good effort at task performance.” Most forensic neuropsychologists would agree with Loring, that evaluation of effort is critical to provide “appropriate substantiation” of findings.

There are many strategies available to investigate effort, including the use of performance patterns within test batteries, correlation of real-world activities with test performance, patterns that indicate malingering within clinically sensitive tests, and stand-alone tests of malingering, whose primary purpose is the testing of effort, rather than brain injury. It is this latter group to which the Word Memory Test (WMT) belongs.

To best understand the relative advantages of a particular stand-alone test of effort, it must be judged against a set of criteria. However, other than being “sensitive” to malingering, there have been few attempts to systematically describe the attributes of an effective malingering test. However, a number of reasonable criteria can be proposed: Stand-alone effort/malingering tests:

- Measure willingness to exert basic effort and are insensitive to the cognitive dysfunction being assessed (sensitivity and specificity).
- Appear to the patient to be a realistic measure of the cognitive modality under study (face validity).
- Measure abilities that are likely to be exaggerated by patients claiming brain damage.
- Have a strong normative basis underlying test results to satisfy scientific and Daubert concerns.
- Are based on validation studies that include normals, patient populations, and individuals who are suspected and/or verified malingerers in actual forensic or disability assessment conditions.
- Should be difficult to fake or coach.
- Should be relatively easy to administer.
- Are supported by continuing research.

Most of the currently available tests of effort in common use fail one or more of these criteria; the 15-item test is both insensitive and does not appear to be a realistic memory test. The Portland Digit Recognition Test (PDRT; Binder & Willis, 1991) has a strong research base, but is tedious to administer and is sensitive to brain impairment in some patient populations (Pankratz & Binder, 2000). The Victoria Symptom Validity Test (VSVT; Slick, Hopp, Strauss, & Spellacy, 1996) is easy to administer, but has generated relatively little research and is easy to “fake good.” The Validity Indicator Profile (VIP) is easy to administer, but requires a complex and expensive computerized scoring procedure that, in this reviewer’s opinion, is almost impossible to explain to oneself, let alone a jury. The test has been criticized for its weak normative base and lack of sensitivity (Ross & Adams, 1999). A summary of the strengths and weaknesses of these tests can be seen in Table 1.

Which leads us to the WMT. The WMT can be administered via pencil and paper or computer administration. The current computer implementation is DOS-based, but by the time this review is published, a Windows version has been promised (L. Allen, personal communication to author). The DOS program is easy to install and runs on a Windows 95, 98, or 98SE PC. There have been problems running the program under Windows ME but the test authors have indicated that the program runs well under Windows 2000. Users may also wish

Table 1
Selected stand-alone tests of neuropsychological effort—adequacy across proposed criteria

	Measures effort only (sensitivity)	Insensitive to brain damage (specificity)	Hard to coach	Face valid appearance	Reliable norms on normals, brain damaged and malingerers	Easy to administer and score	Easy to interpret	Generating ongoing research	Modality most likely to be exaggerated
CARB ^a	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes
Dot Counting ^b	No	No	No	?	No	Yes	No	No	No
15 Item Test ^c	No	No	No	No	No	Yes	No	No	No
Portland ^d	No	No	No	Yes	Yes	No	No	Yes	Yes
TOMM ^e	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No
VSVT ^f	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes
VIP ^g	No	No	?	Yes	No	A yes S no	No	No	No
WMT ^h	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

^a Computerized Assessment of Response Bias (Allen, Conder, Green, & Cox, 1997).

^b Rey Dot Counting (Lezak, 1983).

^c Rey 15-Item Test (Goldberg & Miller, 1986).

^d Portland Digit Recognition Test (Binder & Willis, 1991).

^e Test of Memory Malingering (Tombaugh, 1996).

^f Victoria Symptom Validity Test (Slick et al., 1996).

^g Validity Indicator Profile (Frederick, 1997).

^h Word Memory Test (Green, Allen, & Astner, 1996).

to obtain a full Windows implementation when it becomes available. There is no Mac version of the WMT.

Because of concerns with coaching, a somewhat minimal description of the test will follow. The WMT is a test of verbal memory using a cued paired associate recall and recognition paradigm, coupled with a later trial involving free recall of the item list. Both effort and actual memory function are testable under this paradigm. In the computer version, patient responses are recorded and compared against normative groups that include patients with severe head injuries or neurological disease. Z-score comparisons between the individual patient's score and each patient group are presented, and the results are categorized by the scoring software as showing one of four degrees of effort from good to below chance. The computer printout is comprehensive, with text and graphic output of scores.

As useful as the test is, the test manual (Version 1.0) is a weakness and reminds this author of the Monty Python sketch where an actor describes his difficulty memorizing Shakespeare—not only because of all the *words*, but because the words have to be memorized *in a certain order*. It can be said of the WMT manual that all the words are there, but their order is idiosyncratic and it is difficult to find useful information, even information so basic as characteristics of the normative samples and effort cut-offs. If this was an intentional attempt to befog attorneys attempting to decode the test, well, it has the same effect on neuropsychologists. The manual clearly needs reworking for the next iteration of the test.

Approximately one third of the 72-page manual is devoted to installing and setting up the computer program itself—a necessary but tedious exercise, since on most computers, the program is self-installing in under one minute and requires very little PC literacy to operate. The middle third of the manual discusses results and clinical interpretation of computer output. The final third compares WMT results with other effort tests, including the CARB (by the same authors) and the California Verbal Learning Test (CVLT). Sample cases are presented, including results from a mentally retarded individual and an 8-year-old child (both of whom produced normal WMT scores). It would probably be useful for the authors to consider breaking the manual into two booklets; the first describing computer installation and implementation, and the second describing the normative populations, test cut-offs etc.

Despite weaknesses in the manual, it is often the case that the mark of a useful and productive test is the amount of basic research that the developer and colleagues are willing to put into it, *after* it has been published. This is clearly the case with the WMT. A group of neuropsychologists with expertise in test development and forensic neuropsychology have collaborated to produce a succession of papers that detail and compare WMT results across various clinical and forensic populations including chronic pain (Gervais, Green, Allen, & Iverson, in press), anosmia (Green & Iverson, in press), traumatic brain injury (Green, Iverson, & Allen, 1999; Iverson, Green, & Gervais, 1999), and fibromyalgia (Gervais, Russell, Green, Pieschl, & Ferrari, in press). There is even a paper detailing results obtained from children (Flaro, Green, & Allen, 2000). The WMT has also been favorably compared against other tests that have been used to detect exaggerated deficit, e.g., the CVLT (Rohling, Green, & Allen, 2000), the Test of Memory Malingering (TOMM; Green, Berendt, Mandel, & Allen, 2000; Green, Berendt, Allen, & Mandel, in press) and the Category Test (Williamson, Green, Allen, & Rohling, 2000).

These investigations, individually and in aggregate, constitute the largest investigation of effort effects in the history of the profession—a profound accomplishment in itself. Results from

these studies also suggest that many prized research-driven assumptions on brain-behavioral relationships will require redoing. How many studies, for example, have explicitly measured effort when investigating neuropsychological impairment claims in potentially compensable disorders, e.g., pain, or postconcussion syndrome? Very few until now, and when the authors have published their results, it is likely that some basic “tenets” about these disorders are really the “unexamined lies” that are “worth fibbing”—they are rewarded, if not caught.

In summary, the WMT is robust, has a large normative base, and has generated important questions with regard to brain injury versus selective effort in the interpretation of neuropsychological test data. Patient and claimant populations have been studied and the WMT was found to be an effective discriminator of effort in the context of a psychological or neuropsychological examination. Based on current and upcoming publications, it appears that the WMT and its cousin, the CARB, published by the same company, will soon be the most researched effort tests available. Considering the preliminary findings of such research, it seems likely that future investigations of litigating populations (e.g., fibromyalgia, multiple chemical sensitivity, mild traumatic brain injury), which omit such tests, may come to be considered unpublishable and uninterpretable.

Clinical neuropsychologists have always considered themselves research-driven and proud to follow the data wherever it leads. Data from the authors of the WMT indicate that about half the variance in neuropsychological test results can be accounted for by motivation and that compensation-driven effort effects may account for many of the symptoms we have heretofore attributed to disease or injury. If we accept such data, then we must consider the WMT as an indispensable add-on to both clinical and academic investigations.

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