Journal of Forensic Neuropsychology

Volume 4
Number 3
2005

Ethical Issues in Forensic Neuropsychology

Guest Editor
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Test Review:[1] GREEN'S WORD MEMORY TEST (WMT) FOR WINDOWS. *Green's Publishing, Suite 201, 17107 107th Avenue, Edmonton, AB, T5S 1G3, Canada. $200.00 US ($285.00 Canadian) for software and manual.*

In our 2001 review (Wynkoop & Denney, 2001), we concluded that the Word Memory Test (WMT; Green, Allen, & Astner, 1996) had plenty of potential, but the software was arduous and unforgiving, the manual was not well-organized and lacked essential elements (e.g., reliability data, correct classification rates), and there was little refereed published research demonstrating its efficacy. Also, there seemed to be a problem with the WMT's software-generated interpretive statements. Consequently, we suggested that, "While the WMT is being refined, clinicians should not rely completely on its interpretive statements" (p. 74).

Since our 2001 review, Green's WMT (2003) has evolved from DOS to a much more user friendly and eye appealing Windows format. A new manual has been written, numerous studies have been published, and computer generated interpretive statements have been modified. These apparent improvements prompted us to revisit the WMT for our *JFN* colleagues.

The WMT is a 20-item visual semantically paired associate learning test that provides indices for immediate and delayed recognition, consistency between the two, multiple choice, paired associate, and two delayed free recall tasks. Some of these tasks are negative response bias indices in that they are relatively insensitive to neurological disorder. Although the recognition tasks employ a two-alternative, forced choice format, the WMT relies most heavily on floor effect, atypical performance, and consistency of performance for decision making regarding effort (cf. Wynkoop & Denney, 1999). Comparison of performance can also be made across tasks of varying difficulty (performance curve analysis), making believable manipulation of the results formidable. The WMT also has memory indices that are sensitive to brain dysfunction, which can be used to clinically characterize recall and recognition of newly learned information (i.e., dual clinical and forensic usage).

Unlike the primitive DOS version, Green's Word Memory Test loaded flawlessly and ran smoothly for us on Windows NT and XP. The manual says that it was designed to run on a Pentium 200 or faster processor using Windows 98SE, NT, 2000, ME, or XP. It requires only 64 MB of available RAM (48 MB for Windows 98) and only 10 MB of hard disk space. Under normal circumstances, the subject enters recog-

nition responses directly into the computer, while the examiner enters the delayed recall response. With the click of a button, the software can change over to a number of languages, including English, French, Spanish, German, Dutch, and Turkish. Additionally, subject data can be moved into a spread sheet, such as Excel.

The real delight in this program is the Report Builder. The Report Builder allows the examiner to choose between presentation of results in bar or line chart for percent correct, and a line chart for z-score comparisons, as well as tables. The program no longer uses an interpretive classification scheme beyond "pass," "caution," and "fail" on the validity scales, and "warning" when performance is unusually low compared to truly amnestic groups. The program allows the examiner to examine the subject's performance in light of more than 50 various normative and clinical comparison groups (e.g., normal adult controls; mild, moderate, and severe TBI; various pediatric groups; patients with other neurological and memory disorders; chronic pain patients; mentally retarded adults). The Report Builder automatically selects the comparison group most similar to the subject's performance, and/or the examiner can select up to five other groups for comparison. The charts show the subject's data in relation to the comparison group(s). Results make identification of legitimate memory patterns and negative response bias quite clear. Moving through the software menus, and printing reports, is almost effortless.

WMT performance has been studied in children as young as 7 (in the published literature). More importantly than age, however, is that a third grade reading level is required for valid administration of the computerized version (Green & Flaro, 2003). Some accommodations can be made for persons who read below this level (Green, 2003), and evaluators can revert to the oral administration as needed (e.g., illiterate and/or learning disabled subjects, blind subjects; Green & Flaro, 2003), with both forms "appearing equivalent" (Green, Lees-Haley, & Allen, 2002, p. 100). The evaluator can easily enter results of an oral administration and obtain all of the available comparisons, although oral administration of the multiple choice items is rather cumbersome and may not compare well with computer administration.

The manual is dramatically improved since the edition that we reviewed almost four years ago. It contains some test-retest reliabilities and summarizes several published validity studies. However, some issues of clarity and organization remain. For example, the manual begins by identifying the WMT as a test of effort, without respect to intent (cf. Frederick, Crosby, & Wynkoop, 2000, for a more thorough discussion

of intent and effort in malingering), but eventually wanders into extensive use of the term "exaggeration." It is not clear when the clinician should consider exaggeration of neurocognitive deficit as opposed to just poor effort or interference due to inattentiveness for a variety of reasons (e.g., neurological illness, depression, discomfort, boredom), or even ample effort to appear legitimately forgetful, all of which would be considered poor effort by the WMT. This does not negate the usefulness of the WMT. Rather, it speaks to the level of forensic acumen in the detection of response bias that clinicians using the WMT, or similar measures, should possess. The WMT is really no more vulnerable in this regard than other response bias tests on the market today.

Correct classification rates are not discussed in the manual in favor of the atypical performance paradigm of poor effort detection. A statistical argument is proffered: "It is mathematically impossible for a DR score [below the cutoff] to occur more than once in [a certain number of] cases" (p. 25; words in brackets are ours to preserve test security). Additionally, a failing effort measure score is considered to be incongruous with normal daily living. Logically, then, the argument concludes that the false positive rate should be very low.

It is clear from the data in the manual and in other related reviews (e.g., Green et al., 2002) that the WMT is not 100% effective in assigning subjects to the suboptimal performance group. However, a number of simulation studies have demonstrated high sensitivity and specificity (e.g., Tan, Slick, Strauss & Hultsch, 2002, achieved a 100% classification rate using the effort measures only; Brockhaus & Merten, in press, achieved a 100% classification rate in a German study; Brockhaus, Peker, & Fritze, 2003, achieved 99% accurate classification in a Turkish study). Additionally, several converging lines of evidence using clinical groups suggest that the WMT is sensitive to poor effort yet refractory to the effects of all but the most severe genuine neurological and psychiatric abnormalities (Green et al., 2002).

The manual is purposefully incomplete. The computer supplements the manual for security reasons (making it more difficult for non-psychologists to learn how to manipulate the test). Green includes his insights into WMT analysis and interpretation in the manual through the use of examples, which is helpful. The WMT has a rich developmental history (including earlier oral administration) that could be more elaborated in the manual.

The WMT is available from Green's Publishing. The software and manual costs $200.00 US ($285.00 Canadian), with a $100.00 annual fee, which includes unlimited administrations, updates via the Internet,

and a WMT Listserve. Dr. Green actively participates in the Listserve, responding promptly to inquiries about the WMT. Many helpful papers and documents are available on the WMT site as well. Additionally, the WMT Listserve provides a forum for clinicians and researchers to share ideas, which we have found to be very informative. In our estimation, this is a unique, efficient, and cost effective means of test publishing and marketing, and education and availability, and hope that it will become a model for others to follow.

In the final analysis, we believe that the positives of the WMT far outweigh any negatives. It has come along nicely since our 1999 review and has established itself as one of the most sensitive and well researched tests of negative response bias in the area of learning and recall available to clinicians today.

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NOTE

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