Noncredible Explanations of Noncredible Performance on Symptom Validity Tests

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Paul Green & Thomas Merten

WHAT DO NEUROPSYCHOLOGICAL AND EFFORT TESTS MEASURE?

Neuropsychological Tests

Neuropsychologists measure brain function using standardized tests, or, at least that is the intention. For generations, it was assumed that differences in cognitive ability from one person to another were accurately mirrored by differences in cognitive test scores, although not perfectly because there was some random error. It was assumed that, in nearly all cases, people being administered cognitive tests were trying their best and that low scores reflected low abilities in nearly all cases. Scores in the impaired range were readily interpreted as signs of cognitive deficits and impaired brain function. Error was assumed to be just as likely to lead to an overestimate of brain function as to an underestimate.

Only relatively recently was it shown that the assumption that people are trying their best is often wrong, and that low scores frequently do not signify low ability at all because the data are simply invalid (e.g., Fox, 2011; Green, Rohling, Lees-Haley, & Allen, 2001; Meyers, Volbrecht, Axelrod, & Reinsch-Boothby, 2011; Stevens, Friedel, Mehren, & Merten, 2008). Invalid test results from poor effort or deliberate underachievement do not occur only in groups where there is an obvious external incentive to appear cognitively impaired, such as those seeking financial compensation for cognitive impairment. Even in groups previously assumed to be highly motivated to do well, effort may be poor, leading to invalid test results. For example, it was assumed that professional athletes being tested cognitively at baseline and then after concussions would try their best. Their motivation was to carry on playing and earning a living. The assumption of valid data and good effort was disproven when an American professional football player, Peyton Manning, admitted that he had deliberately performed poorly at baseline so that his scores after a concussion would look as if there was no impairment, and other players admitted that this was a commonly-used tactic to manipulate the test scores in their favor (Fox59 Sports Staff, 2011). Neuropsychologists now know that, in many different contexts, effort can be low to a degree that is sufficient to invalidate test results, especially if there is an incentive to appear impaired (e.g., Chafetz, 2008; Chafetz, Prentkowski, & Rao, 2011; Flaro, Green, & Robertson, 2007; Sullivan, May, & Galbally, 2007). For that reason, effort testing is increasingly recognized as an essential component of neuropsychological testing (Bush et al., 2005; Heilbronner, Sweet, Morgan, Larrabee, & Millis, 2009).

Effort Tests

Good effort tests are not sensitive to differences in ability between adults and children (e.g., Green & Flaro, 2003). They are unaffected by intelligence level except at the extreme low point (Demakis, Gervais, & Rohling, 2008). For example, several hundred children with developmental disabilities were tested clinically by Dr. Lloyd Flaro over a 15-year period, including children with seriously disabling conditions such as autism, childhood schizophrenia, fetal alcohol syndrome, and mental retardation (Green, Flaro, Brockhaus, & Montijo, 2012). In the whole sample, on average, only 3% of these children would be described as showing poor effort based on results from the Word Memory Test (WMT; Green, 2003/2005; Green & Astner, 1995), the Medical Symptom Validity Test (MSVT; Green, 2004), and the Nonverbal MSVT (NV-MSVT; Green, 2008). In a subgroup of the latter children with a full scale intelligent quotient (FSIQ) between 50 and 70, 6.5% of cases would be classified as having poor effort profiles, which stands in marked contrast to a greater than 40% failure rate of the WMT and MSVT in adults with mild traumatic brain injury (MTBI) in the same report. A quarter of the adults with an alleged history of MTBI failing the easy subtests had a poor effort profile on the WMT, which would be inconsistent with any form of genuine severe cognitive impairment.

Performance on effort tests that are based on very easy verbal recognition memory tasks is affected very little by brain trauma, even by hippocampal damage (Goodrich-Hunsaker & Hopkins, 2009). Such tests are rarely failed by people with most neurological diseases or with a history of severe TBI if the person makes an effort and produces reliable scores on neuropsychological tests (e.g., Carone, 2008). Hence, failure in a nondemented person is usually not a result of neurological injury or disease.

ALTERNATIVE ATTEMPTS TO EXPLAIN EFFORT TEST FAILURE

Whereas effort tests are designed, to the extent possible, not to be sensitive to differences in true ability, the habits of psychologists and psychiatrists do not change easily. As a result, traditional concepts that have been used to explain low scores on neuropsychological tests, which are sensitive to actual impairment of brain function, have sometimes been used in an attempt to explain effort test failure in terms of something other than poor effort. Often, such concepts are inappropriate and not based on empirical data. For example, it is sometimes argued in forensic cases that people with a history of MTBI fail tests like the NV-MSVT because they have impaired memory. This explanation might seem superficially reasonable, but it ignores the fact that such tests are extremely easy and that far more failures on such tests occur in those with very mild TBI than in those with severe TBI. On the NV-MSVT, the rate of failure of the easy subtests was zero in cases with severe TBI, but it was 26% in the MTBI group (Green, 2011). Impaired memory from brain injury cannot explain such a counterintuitive finding, but poor effort in the MTBI cases with compensation claims can do so.

Some clinicians have argued that an examinee was in pain, distracted, anxious, fatigued, or depressed and that it was one or more of these factors that led to the scores on traditional cognitive tests being suppressed. Clinical folklore has accommodated and promoted such interpretations, leading in years past to widespread acceptance in clinical practice of explanations for low test scores based on factors, which appear superficially reasonable but which have not been empirically shown to suppress test scores.

Depression

It is common to read in clinical reports by psychologists, psychiatrists, or other physicians that cognitive impairment is present because the person is depressed. In the *Diagnostic and Statistical Manual for Mental Disorders Fourth Edition, Text Revision* (*DSM-IV-TR*; American Psychiatric Association [APA], 2000), subjective cognitive impairment (e.g., concentration problems, indecisiveness) is listed as a possible symptom of depression. No requirement is made for actual cognitive impairment to be verified on objective cognitive tests, even though subjective symptoms and objective test scores are generally not correlated with each other. Past studies did suggest major cognitive impairment in depression, as reviewed in a meta-analysis by Veiel (1997), but none of those studies employed effort tests. As a consequence, the reliability and validity of the group data were questionable.

These studies probably led to the impression that the observed low test scores signified cognitive deficits, which were a result of depression; whereas the data were probably not valid because of poor effort in a substantial proportion of cases. It has now been established that effort test failure is present in about 30% of people with depression and disability claims and that poor effort has a much greater effect on all neuropsychological test scores than depression. In the Rohling, Green, Allen, and Iverson (2002) study, of those who were making a full effort, there was no difference in neuropsychological test scores between those with and without symptoms of depression.

Until researchers adequately control for poor effort, the profession will not know whether certain subtypes of depression involve impaired cognition or whether any impairment is lifelong or just a transient correlate of an episode of depression. Such studies need to be done in the future. In the meantime, attributing any objective cognitive deficits to depression has to be done with great caution. Explaining failure on extremely easy effort tests based on depression is not justified by the evidence. If people with depression fail effort tests that are failed only by people suffering from dementia or other very severe neurocognitive conditions, poor effort is the most likely cause. Of course, there may be individual exceptions at the extreme end of the spectrum, such as a patient in a severe vegetative depressive state with pronounced apathy; but even in such a case, failed symptom validity tests (SVTs) could accurately suggest that this person's test results are not reliable and not predictive of long-term potential.

In a very recent review of the cognitive effects of depression, McClintock, Husain, Greer, and Cullum (2010) stated, ''Depression has been inconsistently associated with neurocognitive functioning and there is a limited understanding regarding the relationship between depression severity and neurocognitive sequelae'' (p. 29). Their paper reviewed many studies but failed to note that, with only one exception, none of the studies ruled out symptom exaggeration by using SVTs or validity scales built into personality tests, nor did the authors recommend incorporating SVTs into future research on cognitive impairment in depression. Thus, there is still a need for increased awareness on how easily poor effort on testing can lead to spurious test results and why the use of SVTs is now considered necessary in clinical practice and in group research.

In the case of the WMT, MSVT, and NV-MSVT, there is a pattern of scores seen in extremely impaired people suffering from Alzheimer's disease, in which they fail easy subtests and score very much lower on harder subtests. Using simple rules based on profile analysis, no case with dementia was classified as showing poor effort on the WMT (Green, et al. 2012), and almost no case with dementia was classified as poor effort on the MSVT (Howe, Anderson, Kaufman, Sachs, & Loring, 2007) or the

NV-MSVT (Henry, Merten, Wolf, & Harth, 2010; Howe & Loring, 2009; Singhal, Green, Ashaye, Shankar, & Gill, 2009). In contrast, people asked to simulate impairment typically score lower than people with dementia on easy subtests and higher than dementia on the harder subtests, and they do not show the expected superiority on very easy versus hard subtests (Green, 2008; Singhal et al, 2009). In a database of 2,009 consecutive adults tested in the first author's office and in an even larger database of our colleague, Dr. Roger Gervais, about 30% of cases with a primary diagnosis of depression failed the easy subtests of the WMT, MSVT, or NV-MSVT. People with major depression and compensation or disability claims often scored as low as patients with dementia or lower on such very easy recognition memory subtests. However, the mean profiles of scores in such people with depression were similar to those of simulators. Their mean scores were not like those of people with dementia, and they were not explainable based on true impairment.

Pseudodementia After Mild Head Injury

There is a term, ''pseudodementia,'' which refers to someone who appears to be suffering from dementia but is actually suffering from depression. Celinski and Tyndel (1988) selected patients who had been diagnosed with pseudodementia after suffering very mild head injuries. It was stated that one purpose of the study was to ''document that a pseudo-dementive condition may develop as one of the sequelae to a minor or mild head injury with little indication of any brain injury'' (p. 30). Although the study participants were previously working people with normal range intelligence, those who were diagnosed with pseudodementia produced IQ scores between 52 and 77. All 16 cases were said to have poor motivation for rehabilitation; 75% of cases failed to recognize the examiner on the second occasion and claimed no memory of having been assessed before by the same examiner; 56% of cases were thought to be making deliberate attempts to be perceived as seriously disabled; 37.5% of cases ''displayed a Ganser syndrome or willful simulation of symptoms'' (p. 37). Many psychological factors unrelated to head injury were noted to be present, such as feelings of entitlement or using the injury to achieve secondary goals. Nevertheless, it was stated that pseudodementia after very mild head injury ''cannot be equated with malingering'' (p. 35). It was assumed that their psychiatric condition actually suppressed their true ability, such that they could not have obtained higher scores, even if they had tried their best. It was as if depression from MTBI had frozen their cognitive aptitudes, producing a state resembling dementia or moderately severe mental retardation. Yet, in a meta-analysis of the effects of MTBI by Rohling et al. (2011), it was concluded that there is no measurable effect of MTBI on neuropsychological tests 3 months postinjury. In addition, in a meta-analysis by Iverson (2005), it was shown that the overall effect of malingering on neuropsychological test scores was considerably higher than that of a number of different conditions, including TBI, depression, and benzodiazepine withdrawal.

The primary author of the latter pseudodementia study now concedes that malingering was not considered a likely explanation for the low scores, partly because objective effort tests were not being widely used at that time, and the need for such tests was not yet appreciated (Celinski, M., personal communication, June 2011). Two years after the study, the Workers' Compensation Board called in Dr. Celinski to show him a video recording of two of his most impaired patients with pseudodementia working on top of houses as roof installers with no apparent impairment, although still collecting benefits and claiming to be unable to work. Had their brains unfrozen? Had their pseudodementia gone into remission as they recovered from MTBI? More likely is the suggestion that their extremely low IQ scores were

invalid in the first place because they were malingering cognitive deficits to obtain money. It is not plausible that they actually underwent a drop in intelligence from average to as low as 52 merely as a result of a minor head injury ''with little indication of any brain injury'' (p. 30). It was proven after the study ended that two of these cases were malingering, and it is our opinion that the remainder of the group were probably also malingering cognitive deficits. The extremely low IQ scores in the latter ''pseudodementia'' cases represent just one isolated example of a very widespread phenomenon in which invalid and very low cognitive test scores are produced by the client as part of a deliberate strategy to obtain benefits for claimed impairment, and many professionals studying these people do not recognize malingering despite some very strong signs of its presence.

POOR EFFORT IN MILD TRAUMATIC BRAIN INJURY AND OTHER DIAGNOSES

This section describes the prevalence of poor effort in MTBI and other conditions and uses such information to explain why certain explanations of effort test failure are noncredible in MTBI cases.

Mild Traumatic Brain Injury

For people with an incentive to appear impaired and who fail effort tests, the observed test scores typically underestimate actual ability to a marked degree (Fox, 2011; Green, 2007; Meyers et al., 2011; Stevens et al., 2008). In groups of disability claimants or compensation claimants, including those who were already receiving financial disability benefits, it was found that about 30% of cases were not making enough effort to produce valid test results, and in the MTBI group, the figure was roughly 40% (Green et al., 2001). In the group as a whole, the effort made by the examinee was of far greater importance in determining test scores than was the severity of brain injury. Effort explained 50% of the variance in the whole neuropsychological test battery, whereas education explained only 12%, and brain injury severity explained a comparatively minor 4%.

This study outcome was at first a controversial finding because it was hard for clinicians to believe that the tests which they trusted as more or less direct indicators of brain function could be 10 times more powerfully affected by poor effort than by severe brain injury. However, this finding has subsequently been replicated in several studies in different countries, including those by Constantinou, Bauer, Ashendorf, Fisher, & McCaffrey (2005); Drane et al. (2006); Stevens et al. (2008); and, most recently, Fox (2011 and Meyers et al. (2011). These studies show that the magnitude of the suppressive effect of poor effort is so great that a person with a very mild head injury failing effort testing will typically score on a wide range of neuropsychological tests as low as or substantially lower than someone with a very severe brain injury who passes the same effort tests, as first reported by Green et al. (2001). Their scores may be so low that they seem to have pseudodementia but they do not; their data are invalid.

The phenomenon of major suppression of test scores by poor effort has been shown to be very widespread. It is estimated that about 40% of all mild head injury claimants fail effort or SVTs and produce invalid test results (Larrabee, Millis, & Meyers, 2009). In the current first author's (Paul Green's) database, the rate of failure on SVTs was greater for those with a history of MTBI than for those with severe TBI (e.g., Green, 2011; Green, Iverson, & Allen, 1999; Iverson, Green, & Gervais, 1999).

Analysis of the most recent data from 2,009 consecutive cases for this chapter showed that failure of the easy WMT subtests was greater for those from certain referral sources; the highest rate of 38% being found in those referred for assessment by the Workers' Compensation Board, compared with rates of 29% in cases referred by lawyers in personal injury litigation, both plaintiff and defense, and 30% in cases receiving medical disability payments. The failure rate was relatively low at 16% in cases who were employees of a large oil company in which the salaries of skilled and unskilled employees are about 4 times greater than the national average. The lowest failure rate of zero was found in healthy people applying to be police officers and in parents with multiple social and psychiatric problems whose children had been taken away and who were trying to regain custody of their children (Flaro et al., 2007).

The highest failure rate of all on the WMT was in 191 cases with a history of MTBI who were selected for having no computed tomography (CT) brain scan abnormality. Their mean Glasgow Coma Scale (GCS) was 14.7, and they were referred by the Workers' Compensation Board. Whereas the latter cases represented the group which sustained the mildest head injuries, 50% of these cases failed the extremely easy WMT subtests. In contrast, the failure rate was only 23% in 120 cases with moderate to severe brain injuries and a mean GCS of 5.6, all of whom had abnormalities on CT or magnetic resonance imaging (MRI) brain scans. In those TBI cases referred by lawyers, there was a WMT failure rate of only 9.5% in those with severe TBI and abnormal brain scans (n = 21), but the failure rate was 47% in those with a history of MTBI and with perfectly normal brain scans (n = 64). Thus, in those referred by lawyers, the failure rate on the very easy WMT subtests was 5 times higher in the MTBI cases than in those with severe TBI.

In both Workers' Compensation and lawyer-referred groups, failure on WMT effort subtests is far more frequent in those with a history of MTBI than in those with severe TBI. In itself, this finding rules out many alternative explanations of effort test failure, including impairment from actual brain lesions. M. D. Allen, Bigler, Larsen, Goodrich-Hunsaker, and Hopkins (2007) have argued that people taking the WMT showed certain changes in brain metabolism, and they concluded that the WMT really does correspond with brain function and requires effort. There is no disputing that the WMT is an effort test and that the brain must be active to perform even an easy task like the WMT recognition subtests, but M. D. Allen et al.'s (2007) findings do not explain many research findings with SVTs and brain injury. If brain lesions were the reason for failure on easy WMT subtests in people with TBI, there should be a positive dose-response relationship in which lower test scores are found in those with the most severe TBI and the most severe brain lesions. In fact, there is a dose-response relationship but it is negative, with a higher failure rate observed in those with the most minor injuries, as previously explained. Similar results revealing a negative dose-response relationship were reported by Bianchini, Curtis, and Greve (2006), and such results are contrary to what would be found if brain injury caused effort test failure. Instead, a general finding is that effort test failure is greatest in those with external incentives to appear impaired (Chafetz et al., 2011; Flaro et al., 2007), and this is why more failures are obtained by those with a history of the mildest TBIs; presumably their claims of severe impairment are more likely to be disputed than those with obvious very severe brain injuries.

The effects of effort frequently turn common sense expectations upside down, and alternative explanations of effort test failure must be dismissed unless they can account for such paradoxical results. Whereas it would be expected that severe brain injury would create more impairment than mild brain injury, poor effort can com-

pletely reverse this pattern on the WMT, MSVT, NV-MSVT, and other symptom validity measures. In the first author's database of 2,009 consecutive neuropsychological assessments, failure on the MSVT recognition subtests, which are even easier than those of the WMT, was present in 57% of 105 cases with a history of MTBI and normal brain scans, contrasted with only a 14% failure rate in those with severe TBI and abnormal brain scans (n = 56). In the same sample, reliable digit span (Greiffenstein, Baker, & Gola, 1994) showed the same pattern, with only a 15% failure rate in severe TBI but a 30% failure rate in a MTBI population. The Test of Memory Malingering (TOMM; Tombaugh, 1996) was failed by only 6% of the severe TBI cases but by 15% of those with a MTBI history. The relatively low TOMM failure rates are explainable by lower sensitivity of the TOMM than are other SVTs to poor effort (Gervais, Rohling, Green, & Ford, 2004; Green, 2011). When such paradoxical results are observed, it can be very confusing if clinicians try to explain the results as indicators of true brain dysfunction. However, if clinicians choose to address the latter data and not to ignore them, there is little alternative but to conclude that the greater frequency of effort test failure in those with a history of mild versus severe brain injury is contrary to what would happen if brain disease were the primary cause of SVT failure.

Poor Effort in Other Diagnoses

There is a growing awareness that in many other populations in whom we used to assume good effort on testing, erroneous test scores as a result of poor effort do occur and are sometimes pervasive. One example of such a group is university students pursuing accommodations for learning disabilities or hyperactivity for whom high failure rates on effort tests have been attributed to the presence of external gains for appearing to be learning disabled or being classified as having attention-deficit/hyperactivity disorder (ADHD; Harrison, 2006; Sullivan et al., 2007). Almost half of these adults at university failed the WMT, whereas on the same test there was only one failure out of 32 cases of institutionalized people with well-established mental handicaps in a study in Germany (Brockhaus & Merten, 2004). In the same manner, in children with developmental disabilities such as childhood schizophrenia, autism, and fetal alcohol syndrome, only a small subgroup failed effort tests including the WMT (e.g., Green et al., 2012). Poor effort in such children was very much less frequent than in adults seeking compensation for the allegedly disabling effects of MTBI.

Poor effort has been found to be widespread in people who are claiming to be disabled by many and varied conditions such as depression, anxiety, post-traumatic stress disorder (PTSD), chronic pain, or neurological disease (Chafetz, 2008; Green et al., 2001). When failure rates on SVTs are compared between adults (e.g., Green et al., 2001; Sullivan et al., 2007) and children (e.g., Carone, 2008; Green & Flaro, 2003; Green et al., 2012), the results reveal that SVT failure rates are much higher in adults than in children with similar diagnoses (e.g., schizophrenia, bipolar disorder, depression, ADHD, or TBI). This means that schizophrenia, bipolar disorder, depression, ADHD, and TBI are very unlikely to explain effort test failure in most cases, including adults, because such conditions are assumed to affect children more severely than adults, and children generally underperform adults when the data are valid.

There is resistance among some clinicians and researchers to accepting the findings summarized previously because these data suggest that invalid test results from poor effort are common. In fact, they are often present in more than 30% of the

samples studied, severely contaminating group mean neuropsychological test scores, especially in adult groups. The available alternative explanations of effort test failure are limited by three factors: (a) the imagination and creativity of the psychologist or physician interpreting test results; (b) the sparse availability of properly controlled studies in which there is evidence of some factor other than effort, which can explain paradoxical effort test failure rates (i.e., mild vs. severe TBI; adults vs. children); and (c) the traditional practice in the medical profession of recognizing that malingering exists in theory but almost never diagnosing it in clinical practice.

Stone (2009) argued that malingering is indeed very rare. This statement is true if the estimate of the prevalence of malingering is based on the written diagnosis of ''malingering'' by physicians, because nearly all physicians studiously avoid using the term. Yet modern studies using effort tests suggest that malingering of cognitive deficits is very widespread indeed, with an estimated incidence of, for example, 40% in people with claims for disability based on mild head injury (Larrabee et al., 2009). Malingering is commonplace and widespread when there are secondary gains to be had for appearing impaired. It is just that, for reasons to be examined later in this chapter, physicians and other health care providers very rarely state that it is present.

Many attempts to explain low effort test scores apart from deliberately poor effort or gross symptom exaggeration have some appeal to some clinicians because they have been used for generations to explain deficits on conventional intellectual and neuropsychological tests. It is evident that they appear to ''explain'' why low neuropsychological test scores have occurred in particular cases. Examples already mentioned are those of pseudodementia, depression, and brain lesions. Others include anxiety, fatigue, headache, chronic pain, and other psychiatric disorders, including conversion or some other somatoform disorder. The problem is that most of these hypotheses never had much of an empirical basis to support them when they were applied to neuropsychological test scores in the first place. In retrospect, we can now see that past studies of cognitive deficits in groups of patients did not take account of poor effort. It is doubtful whether concepts such as anxiety, fatigue, headache, and so forth have any place at all in explaining failure on very easy effort tests (except perhaps in extreme cases). It is hard to imagine how such factors could account for the results summarized previously, including more effort test failures in mild than severe TBI cases and greater failure rates in adults than in children. In fact, the era of effort testing has prompted a fundamental reexamination of whether such concepts explain any cognitive deficits, and, in some cases, it has led to their rejection.

For example, consider the widely held notion that depression suppresses cognitive test scores and that the effect goes away when the depression lifts. Is this true? Apparently not. In a large sample of compensation claimants, it was shown that once poor effort cases were removed, depression had no effect on any neuropsychological test (Rohling et al., 2002). This is not to say that patients with depression do not have any cognitive deficits; in fact, it may be argued that cognitive deficits such as impaired immediate story recall and abnormal patterns of ear differences (on monaural vs. binaural story recall) in some people with depression are markers of an underlying brain dysfunction and vulnerability to depression (Green, 1987; Green & Kotenko, 1980). This effect is not the same as the idea that cognitive deficits come and go concurrent with transient changes in mood, which would trivialize the significance of cognitive deficits if it were true, nor does it imply that preexisting cognitive deficits can explain failure in the subgroup of patients with major depression who fail SVTs. It might be argued that those patients with depression who failed effort testing in the Rohling et al. (2002) study did so because they were genuinely unable to

pass the easy WMT subtests. If so, we might ask how these patients with depression differed from most who easily passed the same effort subtests. It could be argued that those patients with depression who failed the WMT recognition subtests scored at the same level as patients with Alzheimer's disease because they were actually as impaired as such patients with dementia. This can be rejected because analysis of the WMT profiles showed that they were not the same as seen in patients with Alzheimer's disease. Their scores on harder subtests were not as low as found in patients with Alzheimer's (Green et al., 2012). See the following discussion on dementia for more specific information. In addition, it is not plausible that depression causes cognitive impairment as severe as observed in people with dementia. A more likely conclusion is that past literature on cognitive deficits in people with depression was misleading because invalid low test scores resulting from poor effort were never considered and were never ruled out.

It may be speculated that anxiety suppresses effort test scores, but the evidence is not supportive. People with PTSD have an anxiety-based condition, but when only those PTSD cases passing effort tests were considered, PTSD had no effect on any neuropsychological test score (Demakis et al., 2007). Fibromyalgia is a chronic pain condition associated with cognitive complaints, including impaired memory (sometimes colloquially called ''fibro fog''), but those patients with fibromyalgia passing effort tests had no memory impairment on neuropsychological testing (Gervais et al., 2001). In the latter study, nearly all effort test failures were in the group claiming disability, and there were almost no failures in those without a financial disability claim. Failure on the effort tests could only be explained by an incentive to appear impaired and not by fibromyalgia. This finding is consistent with the fact that when there are positive incentives to pass effort tests, such as getting custody of children, even people with a full scale intelligence less than 70 or people with major psychiatric illness and drug abuse invariably pass effort tests (Chafetz et al., 2011; Flaro et al., 2007).

People with chronic pain syndromes failed effort tests at a rate of 42% in a study by Gervais, Green, Allen, and Iverson (2001). It could have been argued that they failed because of distraction by pain or because of associated conditions such as depression or fatigue. On the other hand, people in the next group of patients with chronic pain from the same Workers Compensation referral source were warned at the end of the day that the computerized assessment of response bias (CARB; L. M. Allen, Conder, Green, & Cox, 1997) was only measuring effort in their case. As a result of providing the latter information, the CARB failure rate dropped to 4%, which was 10 times lower than the failure rate observed when the pain patients were not told that it was an effort test. In contrast, the failure rate on the WMT, about which they were not warned, stayed at the same high level. In the third group of patients, no warning was given about the CARB being an effort test, as in the first phase, and the failure rate returned to baseline. Chronic pain, depression, fatigue, headache, or drug use cannot explain the major differences in effort test failure rates, which occurred merely as a function of telling or not telling the examinee that the test only measures effort. The fact that simply telling the patients with chronic pain that the CARB was an effort test almost eliminated failures suggests that failure was voluntary, externally motivated, and not because of chronic pain, depression, fatigue, or anxiety.

Effort Test Performance in Dementia

It has been established by a vast amount of research over more than the past 25 years that certain SVTs are extremely easy. In many cases, the tests were designed

with the knowledge that recognition memory tests are extremely resistant to genuine memory impairment. For example, three people with bilateral hippocampal damage and amnesia passed the easy WMT subtests, which mainly measure effort, and yet they displayed severe memory deficits on the harder WMT subtests such as free recall of the word pairs (Goodrich-Hunsaker & Hopkins, 2009). As a consequence of such effort tests being extremely easy, these tests are rarely failed by those with severe impairment when the person sincerely wants to do well (Merten, Bossink, & Schmand, 2007).

One exception is that dementia of the Alzheimer's type can lead to failure even on extremely easy effort tests, such as the TOMM. In the TOMM test manual, 27% of patients with dementia listed on pages 43–45 failed the TOMM. In the same manner, the easy recognition subtests of the WMT, MSVT, and NV-MSVT are failed by some people with dementia. On the latter tests, however, the simplicity of recognition memory tasks is not the only principle used to determine whether the data are valid. Just as important is the fact that people with valid test results and good effort score higher on easier tasks than on harder tasks. This finding is the basis of profile analysis. Using this method, it has been shown that very few people with dementia are classified as having put forth poor effort, whereas most simulators are identified by anomalous profiles, which do not reflect the true relative difficulty of the various subtests for those making a genuine effort (Green et al., 2012; Henry et al., 2010; Singhal et al., 2009). This is especially true if more than one of the latter effort tests is used.

Also, using data from the series of children tested by Dr. Flaro, it was found that very few mentally retarded children failed the easy WMT subtests, and those who did mainly had a possible genuine memory impairment profile (GMIP) and not poor effort (Green, 2009). Out of 46 cases with a FSIQ between 50 and 70, only three cases would be classified as probable poor effort, and in two of these cases, the children's reading levels were lower than the minimum required level of Grade 3 for administering the computerized WMT. Even in the FSIQ range of 50–70, most developmentally disabled children are able to pass the easy WMT subtests. Those who fail the easy subtests are usually classified as having a GMIP. It is important to analyze the WMT profile and especially to calculate whether the easy–hard difference is at least 30 points.

If recognition memory tests are not failed by most mentally handicapped children and adults or by people with amnesia from bilateral hippocampal damage (Goodrich-Hunsaker & Hopkins, 2009), then clinicians might assume that failure on an SVT by someone with a history of a very mild head injury would automatically lead to the conclusion that effort is poor and that the person's test results cannot be assumed to reflect their actual capabilities. Logically, that is the correct conclusion because MTBI does not cause mental retardation or dementia and impairment equivalent to severe hippocampal damage (Iverson, 2005; Rohling et al., 2011), and, even if it did, it would still not explain SVT failure. However, some clinicians still explain low scores on SVTs the way they have explained low scores on far more difficult neuropsychological tests for many years. For example, a person who sustained a mild head injury might fail effort testing, and a psychologist hired by the person's attorney might claim that the person really was unable to pass the effort tests because he had a headache, was depressed or anxious, was under stress on the day of testing, had driven a long way to get to the appointment, was angry with the examiner, had back pain, was tired, or because he had actual memory impairment similar to that of people with Alzheimer's disease. There is no limit to the amount of possible alternative explanations that could be put forward to try to explain effort test failure.

Yet in each case, the question is, ''What empirical evidence is there to support the alternative explanation of effort test failure, and can the evidence account for the already published research findings summarized above?''

Usually, the alternative explanations have no credible support. For example, Bowden, Shores, and Mathias (2006) claimed that the WMT effort subtests really measure ability in mild and severe TBI cases. This notion is contradicted by much of the data that have been presented previously, and it was very effectively rebutted by Rohling and Demakis (2010). They showed that Bowden et al.'s (2006) own data supported the general finding that the easy WMT subtests are unrelated to age and intelligence and that they measure effort. There was also no excess of failures in severe versus MTBI cases, which would have been expected if WMT effort subtests really measure ability. In addition, the sample size of the Bowden et al. (2006) study was small, and children were mixed with adults. In their paper, there was no information on how many of the sample were children and how many were adults. This distinction is important because children usually fail the WMT effort subtests far less often than adults, as noted earlier.

Drug Effects on Effort Testing

One alternative explanation for poor performance on SVTs is the idea that some drugs could affect SVT scores, which is an idea that is reflected in a study of the effects of Lorazepam on the WMT (Loring et al., 2011). In that study, some participants who passed the easy WMT subtests on placebo failed when they were on Lorazepam, although one case showed the opposite pattern. That is, one case passed the easy WMT subtests when on Lorazapem and failed when on placebo. Another case failed the WMT on placebo, suggesting poor effort, and then dropped out of the study. Thus two nondrug cases failed the easy WMT subtests, which is evidence that even volunteers with no apparent explanation for performing poorly sometimes do not make a full effort. The mean WMT Immediate Recognition (IR) score in the group taking Lorazepam was 92.1% correct, compared with a mean of 97.9% correct in the placebo group. For the delayed recognition (DR) subtest, the corresponding percent correct scores were 94.4% (Lorazepam) and 97.1% (placebo). Hence, the average effect of Lorazepam was quite small and not enough to push the mean score for the Lorazepam group below the cutoff for failure (82.5% correct).

In contrast, the mean WMT IR and DR scores in the original sample of 20 volunteer simulators described by Iverson et al. (1999) were more than 30 points lower, being 63% on IR and 62% on DR. In the same manner, 322 cases of MTBI in the first author's consecutive outpatient series scored lower than the latter Lorazepam group. The mean scores from all MTBI cases with no brain scan abnormality were 84% correct on IR and 82% correct on DR. In MTBI cases failing the WMT, the mean scores were 72% correct on IR and 68% correct on DR, much lower than the scores observed in the Lorazepam volunteers.

Loring et al. (2011) used all WMT subtests, which is the correct method of administration. This means that we may examine whether the seven cases on Lorazepam failing at least one easy WMT subtest had profiles, as a whole, resembling either those of people with dementia or those of simulators. In the 20 simulators described by Iverson et al. (1999), all cases failed the easy subtests, whereas most volunteers on Lorazepam passed. Reanalysis of the simulator data for this chapter showed that 11 simulators (55% of the group) had a profile that would be classified as poor effort irrespective of clinical diagnosis because their mean score on the easier subtests was not at least 30 points higher than the mean on the harder subtests. In

the seven drugged volunteers who failed the easy subtests, three (43%) had such a profile that could not be explained by genuine impairment. Such profiles would automatically be taken to indicate poor effort and unreliable test results because the easy–hard difference was too small. In the remainder who failed with a possible genuine impairment profile, poor effort would only be concluded if dementia could be ruled out. There was a possible genuine memory impairment profile in 45% of the original 20 simulators and in 57% of the seven volunteers who failed the easy WMT subtests when on Lorazepam. The distribution of profiles of results in drugged WMT failures, therefore, differs little from what was found with known simulators. In the two cases on placebo who failed the easy WMT subtests, one had a poor effort profile and the other had a possible genuine memory impairment profile. In contrast, in people suffering from dementia, all of those cases who failed the WMT had a possible genuine memory impairment profile (Green, 2011).

How should we interpret the fact that seven out of 28 cases on Lorazepam were said to have failed by scoring 82.5% or lower on IR, DR, or consistency, and that the profile distribution of these failures resembles that seen in simulators, not in people with dementia? One interpretation is that Lorazepam might, in some cases, lead to a lowering of effort, giving rise to some degree of suppression of the WMT recognition memory test scores, although much less suppression than we see in simulators or in MTBI cases failing the WMT. If so, it could be argued that we should assume that the person's test results are probably not reliable and do not reflect their abilities when not drugged. The alternative argument put forward by the authors was that Lorazepam produces temporary brain dysfunction in healthy adults and that it thereby causes WMT failure. In fact, the data are not of the type seen in people with brain lesions. On the contrary, the aforementioned analysis of the WMT results suggests that Lorazepam minimally affects the mean WMT, IR, and DR scores in the whole group and that the overall pattern of results in the minority who failed the WMT on Lorazepam was most similar to that of the original simulator sample. Perhaps certain anxiety-reducing medications have the effect of reducing the effort applied to SVTs by a minority of volunteers. Perhaps Lorazepam leads to a state of amotivation in volunteers who have very little invested in doing well or poorly on the WMT. If so, this needs to be studied further with sample sizes larger than in the Loring et al. (2011) study and with various SVTs. On the other hand, the two subjects who failed the WMT when not on the drug and the subjects not on the drug who showed clear evidence of poor effort suggest that there is a problem with effort in some people who volunteer for such studies. They are either more impaired than the people with bilateral hippocampal damage who all passed the WMT (Goodrich-Hunsaker & Hopkins, 2009) and the mentally handicapped adults (Brockhaus & Merten, 2004), or they are simply not as motivated to do well. The latter seems more likely, and it better explains the WMT profiles observed. Ideally, two groups of drug-treated volunteers would be tested: one given a significant incentive to pass the WMT and one with no external incentive. How much money people would have to be paid to pass the easy WMT subtests when given an anxiety-reducing drug in a laboratory is an empirical question.

MALINGERING IN CLINICAL AND FORENSIC CONTEXTS

In clinical and forensic contexts, where there are major incentives to appear impaired, such as the availability of disability payments and time off work or large legal settlements, deliberately poor performance on cognitive tests is hypothetically called malingering. The word *hypothetically* is used here because in practice, malingering is

concluded very rarely by physicians. This is not because malingering is rare but because it is the exceptional doctor who will take the risk of concluding in writing that a person is malingering, even if the evidence is overwhelming. Hence, readers of medical reports will gain the impression that malingering is very rare. The reality is that it is grossly underdiagnosed and not reported in most cases even when it is known to be present. We have heard some physicians claim that they do not see themselves as police officers, enforcing the law in cases of fraud against the disability insurance system. One occupational health physician stated that he did not want to go to work anticipating that 30% of the cases he was due to see that day might be malingering. It was too unpleasant. He told the first author in private, ''I prefer not to know.'' The first author's own family doctor told him that physicians do not diagnose malingering because they would stand to lose a patient and open up the door to ''all sorts of risks.''

Whatever their rationale, in practice, physicians typically avoid using the word *malingering*, with the possible exception of some forensic psychiatrists. Such psychiatrists differ from treating physicians because they do not have a doctor–patient relationship with the claimant, and their main duty is to provide impartial evidence to the court. Such psychiatrists often work in highly secure conditions, with prison guards and police at the ready to defend them if needed. In noncriminal contexts, however, symptoms with no medical explanation, symptoms that are bizarre and nonanatomical, and grossly exaggerated claims of impairment are often explained away by physicians using medical-sounding or psychological concepts that have some superficial appeal but which have very little, if any, empirical support (e.g., nonphysiological findings, inconsistencies, Waddell signs). Going against this tide, the validity of the patient's presentation in clinical neuropsychology today is not taken for granted, and an attempt is made to measure the validity of cognitive deficits and other complaints objectively. Effort tests are required to determine whether test scores are valid or not, and validity checks are needed in self-report instruments to decide whether or not there is gross symptom exaggeration (Bush et al., 2005, Heilbronner et al., 2009).

Effort Test Failure and Compensation

A classic modern-day example of malingering would be an adult with a mild head injury, with no loss of consciousness, no posttraumatic amnesia, no neurological signs, and no brain scan abnormality, who pursues a large financial claim for brain injury and who, in the course of an independent assessment, fails extremely easy tests, such as reliable digit span (Greiffenstein et al., 1994), Meyers' built-in effort indicators (Meyers et al., 2011), the TOMM (Tombaugh, 1996), the Victoria Symptom Validity Test (Slick et al., 2003), or other SVTs (e.g., MSVT).

There are several studies showing that people with low abilities usually do not fail the easy MSVT subtests, except for some people with dementia or people with an external incentive to appear impaired. For example, healthy children in Grades 2–5 nearly all passed the MSVT (Blaskewitz, Merten, & Kathmann, 2008; Gill, Green, Flaro, & Puci, 2007). Children who do not speak French were tested in French and still scored almost 100% correct on the easy recognition subtests of the MSVT (Richman et al., 2006). MSVT failure, like most SVT failures, is far higher in cases of MTBI than in those with severe TBI, and adults fail the MSVT far more often than children (Carone, 2008). Out of more than 200 children with developmental disabilities, only 5% of cases failed the easy MSVT subtests, and, of those, only half would be classified as making a poor effort based on profile analysis (Green et al., 2012). Thus, poor

effort would be concluded in, at the most, 2.5% of developmentally disabled children based on the latter study. In contrast, in the same study, the easy MSVT subtests were failed by 42% of the sample of adults with mild head injury who were claiming financial compensation. Poor effort would be the only reasonable explanation in all such cases.

The U.S. Social Security Administration dispenses hundreds of billions of dollars per year to people in various financial benefit programs. For example, the official report of the Social Security Administration (SSA; 2010) stated that 752 billion dollars were spent by the SSA in the year 2010. Hence, it is a financially important fact that 61% of adult claimants for Social Security disability payments were found to fail the easy recognition subtests of the MSVT, contrasted with 37% failure in children (Chafetz, 2008). Failure rates in children were greater in the children who had other family members receiving disability benefits, suggesting malingering by proxy. On the TOMM, the failure rates in the Social Security disability sample were 56% in adults and 28% in children. Chafetz et al. (2011) compared adult groups of low intelligence: one group with an incentive to look good to obtain custody of their children and one claiming disability. Failure on SVTs was nonexistent in the group trying to get custody of their children; but it was very high in the disability claimant group, showing that failure on SVTs, including the MSVT, was explained by motivation to appear impaired and not by low intelligence.

In people with financial compensation claims for soft tissue injuries or psychiatric presentations in the studies of Richman et al. (2006) in Canada and Gill et al. (2007) in Britain, there was approximately a 50% failure rate on the easy MSVT subtests, and yet mentally handicapped children easily passed the same subtests. There was a 58% MSVT failure rate in soldiers leaving the U.S. Army and being assessed within the veterans administration system (Armistead-Jehle, 2010). In each case, the authors concluded that failure on the MSVT was a function of poor effort, and by inference from the context, malingering was the underlying cause. The latter high rates of poor effort and malingering are consistent with data using other effort tests (Larrabee, 2003; Larrabee et al., 2009), and they suggest that disability and compensation systems are probably being placed under great strain by the multibillion dollar annual costs of supporting a large percentage of cases who are grossly exaggerating their symptoms in pursuit of financial compensation.

THE ''UNCONSCIOUS'' EXPLANATION FOR EFFORT TEST FAILURE

Malingering is inferred from evidence of symptom exaggeration in the context of external gain. However, in practice, when clinicians encounter such effort test failure in a forensic context, there will invariably be someone, often hired by the plaintiff lawyer, proposing alternative explanations for SVT failure apart from poor effort. Stone (2009), for example, speaking for many traditionalists, claims that malingering is rare and argues that in virtually all cases symptoms with no medical explanation are bona fide symptoms that can cause disability. This is a claim that appears to be counterintuitive, and the idea that such unexplained symptoms are unconsciously produced is based on no evidence or at least no data are presented to support this notion. Such medically unexplainable symptoms are grouped together under the term *somatoform disorders*, implying symptoms which appear physical but have no known anatomical or physiological explanation. Under that rubric would fall claims of severe, persistent, and disabling impairment of cognitive abilities by a person with only a MTBI.

People with somatoform disorders, including people with fibromyalgia (Gervais, Russell, et al., 2001) and pain disorder (Bianchini, Greve, & Glynn, 2005; Gervais, Green, et al., 2001), tend to have a high failure rate on SVTs. This should not be surprising because these conditions involve symptom reporting that has no known basis in any actual medical condition, and there are also no objective medical tests (e.g., biomarkers) to confirm the diagnosis. It is hard to disprove someone's claim of having subjective symptoms such as fatigue and pain, including headaches, back pain, neck pain, or limb pain. In many people with such symptoms, the symptoms are real, and gross exaggeration is not present. However, in people with ''soft'' conditions, which cannot be tested by objective medical methods, there are often external incentives for claiming to be impaired, such as avoidance of work, obtaining disability payments, or maintaining their status as disabled; and it is well established that such external incentives are often strongly linked with effort test failure. Malingering in a substantial portion of these cases would seem to be the most obvious explanation for effort test failure. This would be consistent with the fact that those who fail effort tests produce invalid and grossly exaggerated neuropsychological deficits, which also have no medical explanation (Constantinou et al., 2005; Fox, 2011; Green et al., 2001; Meyers et al., 2011; Stevens et al., 2008).

In medicine (especially psychiatry) and in psychology, rather than concluding that the person is voluntarily producing, grossly exaggerating, or faking these medically unexplainable cognitive deficits and sometimes impossible symptoms, there has been a tradition of inferring invisible unconscious processes that are presumed to be the causal factors. It is assumed that the person does not play any voluntary role in producing a large number of symptoms, such as cognitive deficits, pain, fatigue, or paralysis, even though clinicians only know of the symptoms because the person tells the clinicians about them or demonstrates them behaviorally. It is assumed but never proven that the patient is disabled by a medically unexplainable and scientifically untestable process, involving unconscious forces of a Freudian type. In such cases, a choice is made by the practitioner not to use the most obvious explanation of behavior, which is that the person chooses to display himself or herself as being disabled because there are external gains such as money, avoidance of responsibility, or some other desirable change in the environment.

Clinicians would not use unconscious mechanisms to explain away why a person defrauds social security by claiming to be separated from their spouse when they are not, so that the couple can collect more money per month. The courts would probably not accept unconscious forces as an explanation of why a person steals a car or shoes from a store. Recently, a Canadian court seems to have assumed that it was voluntary actions and the obvious financial motivation that best explained why a woman claiming to have cancer shaved her own head and collected large amounts of money from friends and well wishers, when it was proven that she never had cancer.

What is so different then, if a person claims to be disabled by pain, paralysis, or severe cognitive impairment when there is no known medical cause and when the person fails effort tests that are unaffected by pain? Even when the person uses symptoms to claim monetary benefits and when the claimed impairment is grossly inconsistent with history and known medical facts, most physicians prefer to avoid the most obvious explanation, which is malingering. Instead, they usually choose a term like *conversion disorder* or some other somatoform disorder in which it is assumed that the person is not voluntarily exaggerating symptoms and is not using them to secure financial or other external rewards. Here, we would not want to imply that all bizarre and nonsensical symptom complaints are best explained as

malingering, just that physicians and psychologists tend to overuse the concept of involuntarily produced symptoms while overlooking or misrepresenting the many cases where voluntary manipulation and impression management are the main factors in operation.

The same problem of uncritically ascribing unconscious forces to claimed symptoms can be found with the concept of dissociative amnesia. Although dissociative amnesia may occur in people with particularly severe trauma exposure, this form of amnesia is often used as an explanation for why someone could not remember a violent crime that he or she committed (e.g., Cima, Nijman, Merckelbach, Kremer, & Hollnack, 2004; Pujol & Kopelman, 2003). Based on a literature review, Giger, Merten, and Merckelbach (2011) recently argued that, with claimed crime-related amnesia, possible malingering of memory loss has to be carefully investigated by the forensic expert, and malingering should be the preferential hypothesis to be tested. The diagnosis of dissociative amnesia cannot be made by mere exclusion of evidence for organic amnesia. Instead, malingering has to be ruled out on an explicit basis, and this priority, in turn, means that objective methods for identifying symptom exaggeration are required.

A Convenient Diagnosis

The chief physician from one medical disability assessment company, for whom the first author has assessed many people, pointed out that, whereas SVTs and associated observations served to identify malingering in approximately 20% of their cases using effort tests, less than one in a thousand of the same cases were classified as malingering by many specialist physicians employed by the same company. This physician believed that the difference was purely based on political–economic considerations. For example, if physicians began to identify 20%–50% of their cases as malingering, they might face massive opposition by unions representing government and city employees and strike action could ensue. Physicians doing independent medical examinations who labeled people as malingering would risk being blacklisted from seeing many clients, and this would represent the loss of a very lucrative source of income. Blacklisting by a union can mean that doctors contracted by insurance companies to perform independent medical examinations may be prevented from seeing union members.

A case can be made that in medical disability and personal injury claims, the tradition of using a diagnosis of somatoform disorder often describes the politically and economically motivated choices of physicians and other professionals more than it describes the actual condition of the patient. Physicians faced with symptoms that make no medical sense in a person claiming financial benefits on a medical basis either have to admit that they do not know what it is or they have to give it a name. If they call it malingering and attribute intentional symptom production to the patient, they will be obstructing the client's pursuit of what could be large financial benefits. They will, therefore, face a risk of complaints from patients who will strenuously object to being confronted with presenting in a dishonest way. In extreme cases, the physician will face physical threats or face legal action by the aggrieved patient. When faced with these possibilities, it is far more convenient for the physician to use what may appear to be a harmless and widely used label such as somatoform disorder, ''cognitive disorder not otherwise specified (NOS),'' or ''postconcussion syndrome,'' than it is to conclude that the patient is malingering.

The scientific validity of a somatoform disorder diagnosis is compromised by the fact that physicians do not have any objective method to prove or disprove a

central criterion of the diagnosis, which is that the symptoms are not voluntarily produced or exaggerated. However, rarely is this challenge raised. In contrast, the term malingering is used when there is objective evidence to support voluntary exaggeration or fabrication of symptoms for external gain.

The same motivation to avoid unpleasant outcomes and interactions affects any professionals evaluating the same patient, including neuropsychologists, psychologists, physical therapists, and occupational therapists. In some cases, when receiving money for treating the patient, money may be lost by the professional if the patient is labeled as malingering, so there is an added conflict. To understand how and why professionals adopt alternative explanations of malingered behavior, apart from the obvious one, it is necessary to study the real life context in which malingering occurs and the behavior of professionals who are called upon to make a diagnosis. The case of ''the man with no hands'' described next illustrates how a series of professionals failed to consider or acknowledge what would be very obvious to most laymen. The case shows how health care professionals ignored the most obvious explanation and made excuses for a patient who was eventually proven beyond any reasonable doubt to be malingering and, it could easily be argued, was committing insurance fraud.

The Man With No Use of His Hands

This is a real case, but certain details have been changed to conceal the identity of the person and agencies involved. The man with no use of his hands (MWNH) was a 39-year-old driver of a 2-ton delivery truck who was involved in a rear end collision in eastern Canada. When stopped at a traffic light, his vehicle was struck from the rear by a small car. Immediately, the driver of the car, who was uninjured, went to the front of MWNH's truck and asked him if he was alright. MWNH told him that he was not sure whether he was injured. MWNH worked as a driver for many months following the accident, but then he claimed that he had such severe pain that he could not use his hands. He made a workers' compensation claim for wrist pain, neck pain, and back pain from the accident. He also claimed severe and disabling cognitive impairment from a claimed mild head injury. He hired a lawyer to sue the other driver for financial losses from his impairment. He claimed to be unable to drive or do any manual work because he could not use his hands for even simple actions such as tying his shoelaces, lifting a fork, brushing his teeth, combing his hair, or opening a door. He claimed that his wife had to dress him, feed him, and assist in literally all toileting, and yet he appeared very physically fit. He claimed that he could not find any alternative to manual work because he had severe memory impairment, and yet there was no known cause for his cognitive deficits.

MWNH's hands appeared perfectly normal to look at, and one psychiatrist commented that he had calluses to suggest that he had been working. MWNH claimed that he could not push a doorbell with his finger, and he got the taxi driver to accompany him to ring the bell at the front door of the first author's office. Examinations by neurologists and other physicians revealed no explanation for his claimed inability to use his hands. By the time that he was flown from another city to be seen by the first author, he had already seen many different specialists—none of whom could find a medical explanation for his symptoms. However, one doctor diagnosed him with chronic regional pain syndrome (CRPS). A psychiatrist diagnosed him with a somatoform disorder and treated him for this condition for years using opiate medication and antidepressants with no apparent success.

When seen shortly after the collision by a psychologist, MWNH was complaining of impaired memory, and he was given memory testing, including the WMT.

He said that he was unable to use his hand to operate the computer mouse, so he was given an oral form of the test, which involves listening to the examiner reading word pairs and then being presented with various memory tasks, including two 50-50 forced-choice tasks. On the forced-choice tasks, he scored significantly worse than chance. If he had been trying to do well, there would have been no good reason why this patient should not have scored well above the chance range. Chance level scores can occur despite good effort, but this happens only in the most severely impaired people who are typically permanently institutionalized for some form of dementia. Such people are obviously very severely cognitively impaired, and even such severely impaired people very rarely score below chance (Green et al., 2012; Singhal et al., 2009).

The usual interpretation of worse than chance scores is that MWNH knew the correct answers and deliberately chose the incorrect responses. MNWH claimed memory impairment severe enough to prevent him from working. He claimed to be trying his best in the assessment, but this was contrary to the fact that he deliberately failed extremely easy subtests of the WMT. He was receiving financial support for being disabled from work, and he was pursuing a large monetary settlement in court in a personal injury lawsuit against the unfortunate driver of the car that struck his truck. The basis of his claim was that he was both severely cognitively impaired and unable to use his hands for any action whatsoever. MWNH's claimed impairment and his worse than chance test scores meet almost any definition of malingering. He met the Slick, Sherman, and Iverson (1999) criteria for definite malingered neurocognitive dysfunction.

The effort test results were reported, and each physician received a copy of that report. However, the psychologist who wrote the report did not conclude malingering. He mentioned the possibility of a ''voluntary component to symptom production'' but left open the possibility that it could be a somatoform disorder. This diagnostic ambiguity was allowed to exist on file despite the fact that evidence of voluntary exaggeration or faking of symptoms, such as worse than chance performance, rules out a diagnosis of a somatoform disorder. Avoidance of the word *malingering* by psychologists is not unusual because, just like physicians over the generations before SVTs were available, psychologists do not want to stand out as the only health care professional claiming that a client is malingering, when all others are using a label such as somatoform disorder. Doing so could risk a complaint to the licensing body, and responding to such complaints is time consuming, expensive, and aversive. It is easier not to conclude malingering.

A second psychiatrist saw MWNH and was unable to explain the complaint of nonfunctioning hands. As MWNH left his office, the psychiatrist reached out to shake hands and the client shook hands normally, apparently caught off guard. For this reason, the psychiatrist mentioned the possibility that ''there was a voluntary component'' to the syndrome. If so, then he could not be diagnosed as having a somatoform disorder based on *DSM-IV-TR* criteria, but the psychiatrist did not use the word *malingering*. This choice is understandable. Not long ago, within the workers' compensation system, the use of the term *malingering* by a physician would have been taboo and, in the event of a complaint, the college of physicians would frown on anyone using that term. In addition, one forensic psychiatrist who did conclude malingering when it was warranted faced a rally by an injured workers' group outside his office, accusing him of bias, and he has been blacklisted by at least one referral source under pressure from the union. Thus, there are not only external incentives for malingerers to exaggerate or fake their symptoms, but there are also powerful external incentives for physicians and psychologists not to use the term *malingering* in diagnostic reports.

A repeat assessment by the same psychologist led to passing scores on the effort tests, which he had taken the first time, proving, incidentally, that his test results were unreliable because one time he scored worse than chance and the next time he scored almost perfectly. Perhaps he had been coached by his lawyer on the conclusions of the previous psychological report in which worse than chance scores were described. This seems very likely, given that coaching by attorney's prior to neuropsychological assessment is known to happen (Wetter & Corrigan, 1995; Youngjohn, 1995).

In a neuropsychological assessment by the first author, which was requested by the defense lawyer in the accident claim, MWNH showed a pattern of failure on SVTs consistent with invalid data, but there were no worse than chance scores. He failed effort tests, which he had not been given before and which he could not have read about in prior reports. It was concluded that the claim of being unable to use his hands was not plausible based on past medical assessments and that he was malingering cognitive impairment, as shown by evidence of worse than chance scores on prior effort testing, memory complaints grossly out of proportion to the accident details, no evidence of any brain injury, a lack of any credible medical explanation for his physical or psychological symptoms, the lack of any understandable temporal association between the paralysis of his hands and the timing or mechanics of the minor motor vehicle accident, and a demonstrated ability to shake hands normally when off guard.

A panel of three psychiatrists was asked to review the case and decide whether the man was genuinely impaired and eligible for benefits within the workers' compensation system. His treating psychiatrist appeared before the panel and introduced himself as ''an advocate for the patient,'' which is different from an impartial and objective witness. Although acknowledging that there was no medical explanation whatsoever for MWNH's inability to use his hands for simple actions or for his claimed severe cognitive impairment, the psychiatrist argued that, nevertheless, MWNH was genuinely severely disabled and that he was unable to use his hands for any actions because of a somatoform disorder. He ignored the evidence of significantly worse than chance test scores on effort testing and the fact that he demonstrated the ability to use his hands when caught off guard and stated that the man was not consciously producing any symptoms, which is simply not credible. After reviewing the file, including the report of worse than chance responding, the review panel of psychiatrists concluded that, although it was unusual, MWNH was indeed unable to use his hands and was totally disabled from work. They wrote, ''We see no evidence of malingering.''

The defense lawyer was more impressed than the review panel by the evidence of malingering and so he flew MWNH to see a medical specialist in a distant city. He was videotaped on the outward flight, acting disabled and being given special assistance for feeding and drinking. However, on his return, when he reentered the airport and presumably did not know that he was being watched, he demonstrated on videotape that he had full and free use of his hands when opening doors, carrying things, eating at a restaurant, and using the washroom without the assistance of his wife. The videotape proved beyond reasonable doubt that his claim of persistent and unremitting inability to use his hands for even simple actions, such as urinating, eating, or opening doors was utterly false.

Thus, the treating psychiatrist's hypothesis that his condition was involuntary was proven wrong. The idea that there was some unidentifiable, invisible, and unconscious force producing the symptoms was also rendered noncredible. The most obvious explanation was the best one, which was that he was faking symptoms to

obtain money. The review panel members were proven to be wrong in their conclusion that he was actually unable to use his hands, and they were wrong in concluding that he was not malingering. At an informal event, it was suggested to one of the review panel members that even if the evidence of malingering were overwhelming and incontrovertible, as in this case, he would still avoid the conclusion of malingering in any case that he saw. His reply was ''Right. It is not worth the risk.''

The treating psychiatrist described his somatoform disorder as severely disabling, and the presumed underlying cause was an unconscious process outside of his control; but this was disproven by the videotape and by the worse than chance WMT scores. In this case, the explanation that MWNH's symptoms were driven by unconscious forces was impossible to accept once all the evidence was gathered. The story of MWNH illustrates how far many physicians and psychologists will go to avoid confronting the patient with the fact that their presentation is invalid and how personal considerations can take precedence over diagnostic accuracy when facing the prospect of stating that someone is malingering. Readers who are not very familiar with the adjudication of compensation and disability claims might be surprised to know that MWNH was not charged with fraud. Several lawyers were involved, each representing different parties. The lawyers agreed on an out-of-court settlement of hundreds of thousands of dollars, three quarters of which was claimed by one benefit agency in a subrogated claim. His own lawyer took roughly a third of the remaining money, and the client took the rest.

The defense lawyer reported that MWNH was still paid monthly compensation despite proven malingering. The defense lawyer was asked why no fraud charge was brought, and he explained the motivation of all parties involved. To the insurance company, the costs of settlements of this type are covered by their own insurance at an international level, but such insurance would *not* cover their own court costs if they charged the client with fraud. The defense lawyer explained that to prove that his claim was fraudulent, ''a bevy of doctors who supported MWNH with the favorable diagnosis of somatoform disorder would have to be proven incompetent in court'' and, as he said, ''Judges do not like to do that.'' Lawyers themselves prefer out-of-court settlements, as long as their costs are covered and the agreement satisfies all the lawyers. The client's lawyer moved to a quick settlement, once he saw the video recording proving beyond any reasonable doubt that his client's claim was false and, probably from a legal perspective, also fraudulent. He knew that he could lose all financial returns if the case went to court, so he settled for a lesser but still substantial amount.

This case illustrates how a fictional and directly disproven concept of unconsciously produced symptoms can prevail in medicine, in the insurance system, and in the legal arena not because it is factually correct but because it satisfies the motivational needs of everyone involved. The physicians who suspected but did not state that MWNH was malingering did not have to face the anger of the client, and they were paid for their ''expert opinions'' even though they were all wrong. One psychiatrist carried on treating the presumed somatoform disorder with opiate medications and was well paid by the government for doing so. He presumably received no complaints from the patient. The psychologist was not the recipient of any complaint to the college about his assessments for which he was compensated. The lawyers on both sides were content, although the plaintiff lawyer would have been happier if the multimillion dollar claim of total disability had been accepted. One benefit-funding agency, which had paid MWNH for years, received a large sum and carried on making payments anyway. The defending insurance company had no out-of-pocket costs for a trial. The buck was passed or rather hundreds of thousands of

bucks in liability were passed to an international insurance company thousands of miles away across the Atlantic. The doctors could carry on without having to revise their use of the concept of a somatoform disorder because they probably never saw the videotape or heard the evidence that it contained. This is because legal settlements and evidence from video recordings are usually kept private.

Wilkinson and Picket (2010) pointed out in their book on social equality, ''While natural scientists do not have to convince atoms or cells to accept their theories, social theorists are up against a plethora of views and powerful vested interests'' (page xi). Nowhere is this more apparent than where there are large amounts of money at stake. When studying malingering, there is a need to understand the motivation and external incentives of all persons involved in handling the claim, assessing the medical condition, performing neuropsychological assessment, conceptualizing and describing the person's impairment, making insurance decisions, and reaching a legal settlement. It is within this complex setting that most health care professionals avoid using the word malingering, and in which neuropsychologists encounter many forms of noncredible explanations for noncredible symptoms. The noncredible explanations sometimes serve to protect the physician or psychologist from potential retaliation and complaints by the client. However, neuropsychologists have an ethical obligation to report their findings accurately and honestly. As the American Psychological Association's Ethics Code (2002) states, ''Psychologists seek to promote accuracy, honesty, and truthfulness in the science, teaching, and practice of psychology. In these activities psychologists do not steal, cheat, or engage in fraud, subterfuge, or intentional misrepresentation of fact'' (Knapp & VandeCreek, 2003).

It is time to recognize that the responsibility for identifying malingering should not rest with any single physician or psychologist because, in practice, the potential personal risks will deter nearly all such examiners from reporting their suspicions of malingering. When all other professionals involved in a case are using euphemistic terms to describe the malingering patient's presentation, a single professional who identifies malingering in writing not only faces opposition from the client but also is isolated because of the choices of other professionals not to face and report the facts. Perhaps, responsibility needs to be taken by the insurance agencies, which should arrange for anonymous committees to adjudicate claims and offer protection to examiners who identify evidence of malingering. Otherwise, as is the case today, in practice, nearly all instances of malingering will not be identified, and misdiagnosis will be the norm as in the case of MWNH and most others like him.

Forms of Resistance Against Symptom Validity Assessment

The history of symptom validity assessment is partly a history of resistance against it at various levels from within the field of neuropsychology itself, from branches of medicine and other psychological fields, and within the legal arena. Many neuropsychologists who do forensic assessment and who have been working in the field of symptom validity assessment and symptom validity research have been subjected to attacks at various levels. In a presentation by the second author at the European Symposium on Symptom Validity Assessment in May 2011, a number of pitfalls in reinterpreting effort test failure were identified. They are summarized in Table 5.1.

Some of the pitfalls in the table have already been presented in this chapter, including ''amelioration,'' ''pathologism,'' and ''mythologism,'' all of which are implicit in the case of MWNH, and Table 5.1 explains what they are. There is, of course, some overlap between different pitfalls. Thus, in a case of claimed retrograde amne-

TABLE 5.1 Potential Pitfalls for Opponents of Symptom Validity Assessment

Identified Pitfalls	Characteristics	Proposed Remedy
Amelioration (or Meliorativism)	Avoiding clear diagnostic statements about malingering and negative response bias; use of euphemistic or obscuring language.	Use clear and correct language; identify negative response bias when it is present according to diagnostic standards; do not try to obscure it.
Mythologism	Repeating traditional beliefs without questioning them in the light of accumulated empirical evidence.	Study carefully the rationality and the empirical basis of authority statements; do not repeat them in an uncritical way. Note that mythologism may, in fact, weaken the arguments used rather than strengthen them.
Pathologism	Detecting a disease or a mental disorder in all persons who claim symptoms or problems.	Accept the fact that there are healthy people and that healthy people may claim symptoms that cannot be confirmed; analyze the validity of claimed symptoms instead of accepting them at face value.
Authoritarianism	Considering the verdict of famous (mostly older) experts in the field as the highest degree of evidence, in neglect of accumulated empirical research and evidence-based assessment.	Remember what Douglas MacArthur said: ''Old soldiers never die, they just fade away.'' In the end, evidence-based arguments will prevail.
Ignorism or global attack against psychology	Proclaiming generalized incompetence of psychologists in the field of forensic assessment.	The competence of a professional is not created by verdict. Have a close look at what psychologists and their arsenal of validated assessment methods may offer to improve the quality of differential diagnosis.
Trivialism	Assuming that psychological assessment can be done by anybody.	Remember that psychological assessment in general and symptom validity assessment in particular are complex professional tasks that require an adequate level of qualification.
Personal attack	Going beyond any rational argument and attacking your opponent personally.	Although this procedure may be very efficient in the short run, it will backfire. If there are no better arguments, refrain from scientific dispute.
False historicism	Evoking historical associations to underline ethical doubts about symptom validity assessment.	If history is called into the witness box, be careful to be historically correct. Consider that lessons from history may have been learned.
Pseudoethics	Applying ethical principles in a flawed, often populist way.	Analyze the ethical implications according to established bioethical principles (e.g., Bush, 2007; Bush, Connell, & Denney, 2006; Iverson, 2006).
Repetitivism	Assuming that a statement is true because it is made so often (e.g., that malingering is very rare).	Look for the empirical data that support or refute the claim.

sia without anterograde amnesia, with identified external incentives and below chance responding on a forced-choice SVT, a clinician may shy away from concluding that the results clearly indicate malingering and end up, instead, with the diagnosis of ''dissociative amnesia.'' This failure can be characterized both in terms of amelioration and pathologism. When the clinician then argues that, even if this may be a case of malingering, it was not his or her role to question the authenticity of the symptom claim, and he or she had to protect the patient's credibility by (wrongly) giving him a psychiatric diagnosis; the clinician may also be trapped in ''pseudoethical'' considerations.

There is a legend holding that fraudulent, pure, and deliberate malingering is its most infrequent form and that it is truly rare. Instead, exaggeration of real symptoms is the more common version of malingering. This hypothesis was formulated by Raecke (1919) and has been repeated many times (e.g., Braverman, 1978; Stone, 2009). Based on this traditional belief, it is sometimes argued that the whole database on negative response bias is flawed and does not reflect realities in European countries or North America, but it epitomizes the errors of mythologism, ''authoritarianism,'' and ''repetitivism.'' The truth is that there is no sound methodological basis to determine what percentage of uncooperative patients' present *pure* forms of false symptom report or false symptom presentation. The basic problem is that in cases of uncooperativeness, it is often impossible to determine how much of the claimed symptomatology is authentic and how much is not. As a consequence, there is no reliable basis for estimating the base rate of *pure malingering* (Resnick, 1988). Today, the use of SVTs makes the task of identifying malingering a lot easier, although still it is not possible to prove based on sound methodology that all symptoms are malingered, even if it is proven that some are malingered. Forced-choice test scores that are significantly below chance provide the strongest evidence of intentional attempts to deceive the examiner.

CONCLUSIONS

It is fair to conclude that symptom validity assessment and the differential diagnosis of non-authentic symptom production remains an aspect of the field of neuropsychology, which, at times, is fiercely disputed both in the public and among clinical and forensic experts. Professionals may encounter different forms of resistance when they perform symptom validity assessment according to established standards of neuropsychology (e.g., Bush et al., 2005; Heilbronner et al., 2009). General recommendations for how to deal with resistance or personalized attacks are the following: (a) do not respond with the same strategy; (b) use sound and scientific arguments; and (c) favor evidence-based clinical and forensic assessment. In the end, logical argument and the empirical database will prevail.

There is a financial motivating factor that drives this symptom validity assessment process, and it will probably eventually lead to improved methods because of the scope and seriousness of the problem. Malingering is a multibillion-dollars-a-year problem for major institutions, agencies, and companies which provide financial support for those claiming impairment and disability. However, as methods for identifying invalid presentations and implausible disability claims become more effective and more solidly research-based, the professionals who assess disability will face a looming ethical challenge. Should they face the facts now or continue to resist addressing the implications for their daily work of the voluminous research now

available to support the use of symptom validity testing (Morgan and Sweet, 2009)? We strongly suggest the former.

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