

# Masquerades of Brain Injury —

## Part II: Response Bias in Medicolegal Examinations

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### INTRODUCTION

Evaluation of impairment and disability following physical, neurologic or other injuries/diseases, as well as psychiatric disorders, typically involves such contexts as social security disability application, personal injury litigation, worker's compensation claims, disability insurance policy application, other health care insurance policy coverage issues, and the determination of competence to work, handle finances or fulfill other important life functions (e.g., parenting or driving). However, evaluation of impairment and disability presents a significant diagnostic challenge fraught

with potential obstacles and confounding issues, especially in cases of functional disability following less conspicuously severe or catastrophic injury such as psychological, subtle neurologic or soft tissue damage<sup>1-2</sup>.

Empirically validated "rating systems" for most of the deficits associated with these disorders are lacking. Evaluations are too often performed despite limited training in disability issues, application of complex differential diagnostic issues and the various potential ethical conflicts relevant to medicolegal evaluations. Even if problems relating to environmental incentives and other influences that contribute to bias in the examinee (and examiner) in medicolegal contexts were not present, disentangling the multiple contributors to impairment and disability would still represent a diagnostic challenge that requires careful scrutiny<sup>1-3</sup>.

Unfortunately, we cannot ignore the effects of response bias as a critical element in the conduct of medicolegal evaluations. Response bias, as used here, refers to a class of behaviors that reflect less than fully truthful, accurate or valid symptom report and presentation, whether deliberate or unconscious. In this paper, primary focus is given to neuropsychological assessments.

Given the frequent highly desirable incentives to distort performance, examinee motivation to provide truthful report and full effort is an extremely important prerequisite to valid assessment. Valid assessment is required for provision of: a) accurate diagnosis; b) appropriate and timely treatment to promote optimal recovery; c) prevention of iatrogenic impairment and disability reinforcement, and promulgation of unnecessary health care costs; and d) appropriate legal compensation decisions based on causality and level of damages suffered<sup>4</sup>. In the context of impairment and disability evaluations, or insurance related evaluations, reports demonstrating high prevalence rates of response bias in examinees are proliferating<sup>5-10</sup>.

Although most studies focus on exaggeration of impairments, incentives also exist for minimizing deficits. Another too often neglected area of response bias is examiner response bias<sup>11</sup>. After a review of response bias issues, recommendations for enhancing objectivity in medicolegal evaluations are offered.

### ATTRIBUTION AND BIAS

A brief review of important sources of bias seen during evaluation of physical, neurocognitive or psychological impairments follows<sup>1-3, 12</sup>.

*Examinee* attribution biases that confound accurate diagnosis include mistaking clinical conditions like depression and sleep disorders and associated sequelae for neurologic

injury and sequelae. This can occur due to misattribution, over-attribution, illusory correlation, or heightened vigilance to benign problems<sup>13</sup>. Importantly, the previously mentioned conditions (e.g., depression, sleep disturbance) are treatable and may have been present prior to the injury without producing significant limitations. Furthermore, emotional states and fatigue may interact with actual physical dysfunction to increase impairment.

Avoidance of parallel *examiner* misattribution requires careful differential diagnosis of sequelae secondary to brain injury from cranial/cranial adnexal and cervical trauma impairments, chronic pain symptoms, psychological sequelae, motivational factors, etc. When "abnormal" neurocognitive findings and/or non-specific somatic complaints are obtained, "over-diagnosis" of neurologic disorders such as mild traumatic brain injury can only be avoided through careful differential diagnosis. For example, brain injury specialists sensitized to neurologic symptoms might interpret chronic pain sequelae as post-concussive symptoms. Of note, such examiner attribution bias may be of concern in any health care specialty, reflecting the fact that we see what we look for or have been trained to see.

## EXAMINEE RESPONSE BIAS

Although the incidence of response bias in various medical or psychological problems can only be estimated, it is increasingly evident that compensation is an important issue affecting presentation<sup>6</sup>. There are numerous reports demonstrating high prevalence rates of response bias with significant impact on symptom report and test performance in medicolegal evaluations<sup>5-10</sup>. For example, Green and colleagues report on cross validated findings of poor effort measured by response bias test failure higher than 40% in some groups (i.e., workers compensation evaluations). Poor effort was found to have a stronger effect on neuropsychological test scores than did severity of brain injury or neurological disease<sup>9-10</sup>. These findings imply that failure to control for effort level leads to false conclusions, not only for individual clinical diagnoses, but also for group data from which we derive clinical diagnostic information.

Although response bias is most commonly conceptualized as deliberate exaggeration of difficulty (e.g., symptom magnification, malingering), a continuum exists that extends from (1) denial or unawareness of impairments through (2) symptom minimization, (3) normal or average symptom presentation, (4) sensitization to subtle or benign symptoms or problems, (5) exaggeration or symptom magnification, and up to (6) frank malingering. This unidimensional conceptualization likely represents an oversimplification that obscures the subtleties of a wide range of response biases that may be demonstrated, but nonetheless serves as a useful framework.

*Unawareness and denial* refer to neurologic or psychological phenomenon wherein impairments are under appreciated due to dysfunction of cognitive operations subserving

awareness, or personal shortcomings are psychologically repressed to guard against distressful realizations. *Symptom minimization* is a more deliberate phenomenon, usually motivated by intention to limit impact of undesirable functional restrictions or distress, and engage in desired activities. Failure to detect such biases can result in overestimation of abilities that could potentially endanger the welfare of the examinee.

Medicolegal assessments should be concerned with people exaggerating normalcy or exaggerating deficits, and the legal system should be concerned with people being under compensated or overcompensated. Sometimes subtle impairments are missed given a relative absence of self reported problems and adequate neuropsychological test performance. Attention should be paid to corroboratory report of greater problems than described by the examinee, declining performance in work and other functional life areas as assessed by others that contradict examinee denial, and externalization of blame<sup>14</sup>. Notably, objective assessment procedures administered in a quiet, structured and distraction free testing environment are not always sensitive to difficulties with self-directed activity in the real world.

Undue *sensitization* to distress from mild, negligible or benign symptoms can lead to a spectrum of abnormal illness behaviors and response bias in reporting problems. Anxiety can augment symptom perception and health concerns. Sensitization may be especially relevant for post-concussive symptoms that often appear with similar frequency in the general population<sup>15-16</sup>. *Symptom magnification* refers to conscious or unconscious exaggeration of impairment and can reflect multiple factors, including financial reward and psychological needs, including: garnering attention that would otherwise not be forthcoming; resolving pre-existing life conflicts; retaliating against employer or spouse; finding more socially acceptable attribution for psychological disorders; reducing anxiety and exerting a "plea for help" or soliciting acknowledgment of perceived difficulties. Excessive preoccupation with symptoms is involved in a number of DSM-IV somatoform disorders<sup>17</sup>. Depression, post traumatic stress disorder and other anxiety conditions in which there can be sensitization or magnification of symptoms can represent important imitators of bonafide physical and neurologic impairment.

*Malingering* is the extreme form of response bias and reflects deliberate symptom production or gross exaggeration for purposes of secondary gain. In the medicolegal evaluation, it is often reflected by responses biased in the direction of false symptom reports or managed effort to produce poor performance on tests. Measures of this type of response bias should always be administered in cases of medicolegal presentation and where there is suspicion of any disincentive to exert full effort, or suspicion of sociopathic personality disorder<sup>17</sup>.

Response bias represents an especially important threat to validity of medicolegal assessments. Because assessments include and usually begin with an interview about self-reported symptoms and rely heavily on measures of perfor-

**Table 1: Survey of Attitudes Regarding Workers Compensation (WC)**

Question	Respondent Sample				
	Disability Evaluating Professionals (N=19)	Rehab Psych/ Neuropsych Staff (N=7)	Case Managers (N=17) including 8 W.C. CM's	Rehab / Health Psychologists / Neuropsych's/ PMR MD's (N=22)	W.C. Patients (N=12)
1: % of Injured Workers Who Fake, Exaggerate, Malinger	19.2	24.7	28.5	19.2	35.0
2: % Injured Workers that W.C. Treats Unfairly	49.2	62.5	23.2	42.6	74.2
3: % Employers Who Treat Injured Workers Unfairly	53.5	41.2	32.7	35.6	65
4: Likelihood Employer Would Treat You Unfairly	43.75	54.2	46.4	23.6	70.8
5: Likelihood W.C. Would Treat You Unfairly	60	65.9	48.9	40.44	77.75
<b>Demographic Data</b>					
IV-1: Avg. Years Employed	25.8	10.2	8.9	18.33	18.8
IV-2: Avg. Education	18.2	19.3	16.2	20+	14.2
IV-3: Sex	66% Female	57% Female	100% Female	76% Male	75% Male

mance on standardized tests, the validity of the results requires the veracity, cooperation and motivation of the patient. However, patients seen for presumptive brain injury-related impairments over-report preinjury functional status in regard to post-concussive symptoms that often appear with similar frequency in the general population<sup>13-14</sup>. Further, the ability of neuropsychologists to accurately detect malingering in routine test protocols has been less than impressive<sup>18</sup>.

## FACTORS ASSOCIATED WITH EXAMINEE RESPONSE BIAS

Martelli et al.<sup>12</sup> in a review of the literature found the following vulnerability factors associated with increased likelihood of maladaptive post injury adjustment and response bias: anger, resentment, or perceived mistreatment; fear of failure or rejection (e.g., being fired after injury); loss of self-efficacy; external locus of control; irrational fear of injury extension, re-injury, or pain; limits in usual coping style (e.g., highly physically active person who has a back injury); insufficient residual coping resources and skills; prolonged inactivity resulting in disuse atrophy; fear of losing disability status, benefits or safety net; high compensability for injury; preinjury job dissatisfaction; sociopathic or manipulative personality traits; collateral injuries (especially if "silent"); retention of an attorney; reinforcement for "illness" vs. "wellness" behavior; inadequate or inaccurate medical information; misdiagnosis, late diagnosis, or delays in instituting treatment; and insurance resistance or delays in authorizing treatment or paying bills.

With regard to external factors affecting outcome following injury, several important studies demonstrate a negative impact associated with an adversarial medicolegal system. Binder, Trimble and McNiel<sup>19</sup> noted less psychiatric impairment in persons who had shorter injury to settlement intervals, suggesting that increased litigation time produces negative psychological effects. Mendelson<sup>20</sup> studied a large sample of litigants who had not returned to work at settlement time. Contrary to "compensation neurosis" hypotheses, he found that most were not working two years later. Length of time out of work was strongly associated with decreased likelihood of ever returning to work. The hypothesis was advanced that litigation may prevent persons from receiving immediate treatment and returning to work promptly, both of which negatively correlate with long-term outcome. Evans<sup>21</sup> conducted a longitudinal study of personal injury litigants in automobile accidents. He concluded that the strongest predictors of successful outcome were the inclusion of psychological services in the treatment plan, receipt of immediate intervention with treatment focused toward return to work, including return at reduced status or modified duties. By six months and every point thereafter, uncooperativeness and delayed bill paying of medical insurance carriers (vs. medical symptoms) was the most frequently reported stressor. Notably, of patients whose insurance carriers paid bills promptly (i.e., <=30 days), 97% had returned to work. In contrast, for patients whose insurance carriers delayed payments (i.e., > 90 days), only 4% had returned to work.

Cassidy, et al.,<sup>22</sup> described the incidence and speed of claim closure of whiplash injury before and after change from a

tort to no-fault insurance system in Saskatchewan Canada. The incidence of claims dropped by 28% following transition to no-fault in which there were no payments for pain and suffering, while median time from injury to claim settlement was cut by 54%. Notably, the intensity of neck pain, level of physical functioning, and presence of depressive symptoms were associated with increased time to claim closure in both systems, as was having a lawyer. The authors concluded that providing compensation for pain and suffering after whiplash injury increases frequency and duration of claims and delays recovery. Under the no-fault system, in addition to eliminating most court actions, income replacement and medical benefits were increased and medical care became universal with "no barriers" to treatment. These findings, along with observation that pre-injury anxiety was associated with delayed claim closure only under the tort system, suggest that removal of financial disincentives and medicolegal associated treatment barriers, has a facilitative effect on post-injury recovery.

The presented studies offer evidence that insurance companies and legal systems prolong rather than optimize post injury recovery. In an effort to investigate response bias that may be iatrogenic to the adversarial nature of the medicolegal system, the first two authors have been collecting survey attitudinal data from professionals who work with injured Workers Compensation (WC) patients, as well as the patients themselves. A summary of the preliminary data is offered in Table 1. Despite the use of convenience samples, the data are quite compelling in showing a high level of distrust. Overall, approximately 20% of injured workers are judged to significantly exaggerate or malingering, while more than double that percentage are judged to receive unfair treatment from Worker's Compensation insurance. These data indicate the general skepticism faced by injured persons is largely justified in the opinions of professionals who work with them. Preliminary data indicate similar skepticism toward health insurance companies and independent examiners. Data such as these highlight the importance of considering the motivational factors that operate on examinees presenting for disability evaluation and contribute to the high prevalence of response bias.

## RESPONSE BIAS MEASURES AND SCREENING FOR NON-ORGANIC PATTERNS

Various instruments, techniques and strategies have shown at least some utility in detecting response bias in order to estimate validity and increase confidence in assessment findings. In Table 2, adapted from Rogers<sup>23</sup> hallmarks signs of response bias are presented.

**Table 2. Response Bias: Hallmark Signs**

- I. Inconsistencies Within and Between the Following:
  1. Reported Symptoms
  2. Examination / Test Performance
  3. Clinical Presentation
  4. Known Diagnostic Patterns

5. Observed Behavior (in another setting)
6. Reported Symptoms & Exam / Test Performance
7. Measures of Similar Abilities (inter-test scatter)
8. Similar Tasks or Items Within the Same Exam or Test (intra test scatter) — especially when difficult tasks are performed more easily than easy ones
9. Different Testing Sessions

(Of note, the potential contributions of significant psychiatric, attentional, comprehension, or other factors that often involve inconsistent presentations should also be considered)

II. Overly Impaired Performance (vs. what would normally be expected)

1. Very Poor Performance on Easy Tasks Presented as Difficult
2. Failing Tasks That All But those with Severe Impairment Perform Easily
3. Poorer Performance than Normative Data For Similar Injury/Illness.
4. Below Chance Level Performance

III. Lack of Specific Diagnostic Signs of Impairment

IV. Specific Signs of Response Bias on Psychological or Neuropsychological Tests

1. MMPI Scale: F, F-K
2. MMPI-2 "Fake Bad"
3. Malingering Detection Tests
4. Actuarial formulas for clinical neuropsychological tests (e.g., WCST, CVLT)

V. Interview Evidence

1. Atypical temporal relationship of symptoms to injury
2. Psychological symptoms, or symptoms which are improbable, absurd, overly specific or of unusual frequency or severity (e.g., triple vision)
3. Disparate examinee history or complaints across interviews or examiners
4. Disparate corroboratory interview data versus examinee report

VI. Physical Exam Findings

1. Non-organic sensory findings
2. Non-organic motor findings
3. Pseudoneurologic findings in the absence of anticipated associated pathologic findings
4. Inconsistent exam findings
5. Failure on physical exam procedures designed to specifically assess malingering

Table 3<sup>24</sup> is a compendium of many suggested response bias detection tests and strategies derived from a wide variety of sources and available in conduction of medicolegal examinations. Estimates and signs of suspicious performance are included.

## EXAMINER RESPONSE BIAS

Although the primary focus of this paper is examinee response bias, examiner bias/misattribution also occurs and may be an equally problematic source of error. Recognition of clinician bias has led to an emphasis on blind clinical trials, for ex-

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**Table 3: Response Bias Detection Measures and Strategies****Pain Assessment Measures with Built In Response Bias Indicators**

Pain Assessment Battery (PAB) - Research Edition: Proposed clinical hypothesis procedure evaluating:	I. Symptom Magnification Frequency (SMF) > 40% II. Extreme Beliefs Frequency (EBF) > 35% III. Four other "validity" indicators (i.e., alienation, rating percent of max, % extreme ratings (2 scales)) Elevations on 3-item validity scale
Millon Behavioral Health Inventory (MBHI)	Scores of 21-31 (Exaggerating)
Hendler (i.e., Mensana Clinic) Back Pain Test	Scores > 31 (Primary psychological influence)
<b>Medical Indicators</b>	
Hoover's test	Test for malingered lower extremity weakness associated with normal crossed extensor response
Astasia abasia	"Drunken type" gait with near-falls but no actual falls to ground
Non-organic sensory loss	Patchy sensory loss, midline sensory loss, large scotoma in visual field, tunnel vision
Non-organic upper extremity drift	Long tract involvement results in pronator type drift. Proximal shoulder girdle weakness and malingering typically present with downward drift while in supination.
Stenger's Test	Test for malingered hearing loss during audiologic evaluation.
Gait discrepancies when observed versus not observed	If organic should be consistent regardless of whether observed or not.
Gait discrepancies relative to direction of requested ambulation	Gait for a patient with hemiparesis should present similarly in all directions; malingerers do not as a rule practice a feigned gait in all directions.
Forearm pronation, hand clasping and forearm supination test for digit/finger sensory loss	Malingered finger sensory loss is difficult to maintain in this perceptually confusing, intertwined hand/finger position.
Pain versus temperature discrepancies	Due to the fact that both sensory modalities run in the spinothalamic tract, they should be commensurately impaired contralateral to the side of the CNS lesion.
Lack of atrophy in a chronically paretic/paralytic limb	Lack of atrophy in a paralyzed/paretic limb suggests the limb is being used or is getting regular electrical stimulation to maintain mass.
Impairment diminishes under influence of sodium amytal, hypnosis or lack of observation	All these observations are most consistent with non-organic presentations including consideration of malingering or conversion disorder.
Incongruence between neuroanatomical imaging and neurologic examination	Lack of any static imaging findings on brain CT or MRI in the presence of a dense motor or sensory deficit suggests non-organicity.
Arm drop test	An aware patient malingering profound alteration in consciousness or significant arm paresis will not let their own hand when held over their head, drop onto their face.
Presence of ipsilateral findings when implied neuroanatomy would dictate contralateral findings	An examinee claiming severe right brain damage that claims right eye blindness and right-sided weakness and sensory loss.
Tell me "when I'm not touching" responses	An examinee with claimed sensory loss that endorses that he does not feel you touch him when you ask him to tell you "if you do not feel this."
Lack of shoe wear in presence of gait disturbance	An examinee with claimed longer term gait deviation due to orthopedic or neurologic causes should demonstrate commensurate wear on shoes (if worn with any frequency).

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Table 3: Response Bias Detection Measures and Strategies ... continued from previous page

Calluses on hands in "totally disabled" examinee	An examinee who is unable to work should not present with signs of ongoing evidence of physical labor.
Assistive device "wear and tear" signs	In any examinee using assistive devices for any period of time e.g. cane, crutches, there should be commensurate wear on the device consistent with their claimed impairment and disability.
Mankopf's maneuver	Increase in heart rate commensurate with nociceptive stimulation during exam (there is some controversy on whether this always occurs).
Lack of atrophy in a limb that is claimed to be significantly impaired	If side-to-side measurements and/or inspection do not bear out atrophy consider other causes aside from one being claimed.
Sudden motor give-away or ratchitiness on manual strength testing	Considered to normally be a sign of incomplete effort or symptom exaggeration.
Weakness on manual muscle testing without commensurate asymmetry of DTRs or muscle bulk	Suggests simulated muscle weakness if longstanding.
Toe test for simulated low back pain	Flexion of hip and knee with movement only of toes should not produce an increase in low back pain.
Magnuson's test	Have examinee point to area several times over period of examination; inconsistencies suggest increased potential for non-organicity.
Delayed response sign	Pain reaction temporally delayed relative to application of perceived nociceptive stimulus.
Wrist drop test	In an examinee with claimed wrist extensor loss, have them pronate forearm, extend elbow and flex shoulder...if on making a fist in this position they also extend wrist then non-organicity should be suspected.
Object drop test	Examinee claims inability to bend down yet does so to pick up a light object "inadvertently" dropped by examiner.
Hip adductor test	Test for claimed paralysis of lower extremity, similar to Hoover's test yet looks for crossed adductor response.
Disparity between tested range of motion and observed range of motion of any joint	When ROM under testing is significantly disparate (e.g. less) from observed, spontaneous ROM suspect functional contributors.
Straight leg raise (SLR) disparities dependent on examinee positioning	Differences in SLR between sitting, standing and/or bending may suggest a functional overlay to low back complaints.
Grip strength testing via Dynamometer	Three repetitions at any given setting should not vary more than 20% and/or bell shaped curve should be generated if all 5 positions are tested.
Sensory "flip" test	Sensory findings should be the same if testing upper extremity in supination or pronation or lower extremity in internal versus external rotation. Differences may suggest a functional overlay.
Pinch test for low back pain	Pinching the lumbar fat pad should not reproduce pain due to axial structure involvement; if test is positive suspect a functional overlay.
<b>Personality Instruments with Built-in Response Bias Designs</b>	
Personality Assessment Inventory (PAI)	<ul style="list-style-type: none"> <li>• Inconsistency (INC), Infrequency (INF), Positive Impression Management (PIM), and Negative Impression Management (NIM) scales.</li> <li>• 8 score patterns thought to comprise a "Malingering Index" (Morey, 1996).</li> <li>• &gt;2 patterns malingering suspected.</li> <li>• &gt;4 patterns likely malingering. (continued on next page)</li> </ul>

Table 3: Response Bias Detection Measures and Strategies ... continued from previous page

Minnesota Multiphasic Personality Inventory (MMPI-2)	<ul style="list-style-type: none"> <li>• Validity indices (L, F, Fb, Fp, Ds, K, VRIN, TRIN), F-K 54)</li> <li>• The Fake Bad Scale (Lees-Haley, 1991)</li> <li>• Compare subtle to obvious items (tentative)</li> <li>• Fp</li> <li>• Rogers et al (1994) – cutoff scores: Liberal: (1) F-Scale raw score &gt; 23 (2) F-Scale T-Score &gt; 81 (3) F-K Index &gt; 10 (4) Obvious – subtle score &gt; 83 Conservative: (1) F-scale raw &gt; 30 (2) F-K index &gt; 25 (3) Obvious – subtle score &gt; 190</li> </ul>
<b>Qualitative Variables in Assessing Response Bias</b>	
Time /Response Latency Comparisons Across Similar Tasks	Inconsistencies across tasks.
Performance on Easy Tasks Presented as Hard	Low scores or unusual errors.
Remote Memory Report	Difficulties, especially if < recent memory, or severely impaired in absence of gross amnesia.
Personal Information	Very poor personal information in absence of gross amnesia.
Comparison Between Test Performance & Behavioral Observations	Discrepancies.
Inconsistencies in History and/or Complaints, Performance Comparisons for Inconsistencies Within Testing Session (Quantitative & Qualitative):	<ul style="list-style-type: none"> <li>✓ A. Within Tasks (e.g., Easy vs. Hard Items).</li> <li>✓ B. Between Tasks (e.g., Easy vs. Hard).</li> <li>✓ C. Across Repetitions of same/parallel tasks (R/O fatigue).</li> <li>✓ D. Across similar tasks under different motivational sets.</li> </ul>
Comparisons Across Testing Sessions (Qualitative, Quantitative)	Poorer/inconsistent performance on re-testing.
Symptom Self Report: Complaints	High frequency, severity of complaints and severity versus significant other report or other collaborative report.
Main & Spanswick, 1995 <ul style="list-style-type: none"> <li>• Failure to comply with reasonable treatment</li> <li>• Report of severe pain with no associated psychological effects</li> <li>• Marked inconsistencies in effects of pain on general activities</li> <li>• Poor work record and history of persistent appeals against awards</li> <li>• Previous litigation</li> </ul>	
Symptom Self Report: Early / Acute vs. Late / Chronic Symptom Complaint	Early symptoms reported late or acute symptoms reported as chronic.
Response to Typically Helpful Pain Interventions	(1) Failure to show any pain relief to at least one of the following: biofeedback, hypnosis, mild analgesics, psychotherapy, relaxation exercises, heat and ice, mild exercise. (2) Failure to show any pain relief in response to TENS.
Genuine vs. Malingered PTSD (Resnick, 1995)	Stress initiator minimized v emphasized; Blame self v other: Helpless v grandiose dreams; Deny v emphasize emotional impact; Reluctant v easy memory elicitation; Specific v general guilt; More v less stress assoc. environmental avoidance; Helpless v directed anger.
<b>Assessment of Cognitive Effort: Performance Patterns on Existing Psychological / Neuropsychological Tests</b>	
Full Scale IQ	Low vs. expected or predicted IQ.
Arithmetic, Orientation	"Near-miss" (Ganser errors).
WMS-R Malingering Index: Attention/ Concentration Index versus Memory Index	Attention-Concentration Index Score < General Memory Index (AC-GMI).

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Table 3: Response Bias Detection Measures and Strategies ... continued from previous page

Grip Strength	Unusually low w/o gross motor deficit.
Recognition memory: California Verbal Learning Test	< 13
Rey Complex Figure Recognition Trial	Atypical Recognition Errors ( $\geq 2$ ); Recognition Failure Errors.
Full Scale IQ	Low vs. expected or predicted IQ.
Haltstead or Luria Nebraska Battery Formulas	See formulas.
<b>Specific Cognitive Effort / Response Bias Measures</b>	
Word Memory Test (WMT)	< 50%, chance responding or below cutoff.
Test of Memory Malingering (TOMM)	< 50% chance level responding or below cutoff.
Computer Assessment of Response Bias (CARB)	< 89% raises suspicion.
Word Completion Memory Test (WCMT); any implicit memory Word stem priming task	R<9 or Inclusion <15; poor or unusual performance.
Validity Indicator Profile	< 50% chance level responding or below cutoff.
Portland Digit Recognition Test	< 50% chance level responding or below cutoff.
Pritchard Tests of Neuropsychological Malingering	< 50% chance level responding or below cutoff.
Any Symptom Validity Testing (SVT)	< 50% chance level responding or below cutoff.
Dot Counting Test (DCT)	Correct/incorrect responses; time on group v ungrouped.
Rey Memory for 15 Items Test (MFIT)	< 3 complete sets, <9 items.
Adapted from Martelli, Zasler and Pickett, 2001 [24], with Permission. Please write authors for comprehensive list of references.	

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ample. Clinicians sensitized to the signs and symptoms of their particular specialty may misdiagnose or over-diagnose problems, with inadequate attention to competing explanations. Chapman and Einstein<sup>25</sup> have discussed how biases can occur in the face of uncertainty in medical decision-making. Examiners may also display response bias by tendencies to doubt the sincerity of complaints or disregarding their veracity<sup>13,26</sup>. Finally, there is increasing realization of bias in arbitrators' case perceptions and award recommendations<sup>27</sup>.

We have reported preliminary data regarding the common suspicion that examiner bias is influenced by compensation issues<sup>28</sup>. Compelling evidence of perceived expert witness bias comes from a recent report from a Federal Judiciary Committee sanctioned study<sup>11</sup> involving a large sample of active Federal judges and the lead plaintiff and defense attorneys who presented the docket cases before them. Findings, based on compliance enhanced return rates of 51% for judges and 66% for attorneys, were consistent from 1991 to 1998 in revealing that the primary problem with expert testimony was experts who "abandon objectivity and become advocates for the side that hired them." On a one (very infrequent) to 5 (very frequent) Likert Scale of this problem, the mean response was 3.69 for judges and 3.72 for attorneys.

## RECOMMENDATIONS FOR ENHANCING VALIDITY IN IMPAIRMENT AND DISABILITY ASSESSMENTS

The following recommendations are based on previous work<sup>1</sup> and are offered in order to promote objectivity and validity of assessments conducted in medicolegal contexts.

1. Always assess response bias (including malingering) and make efforts to guard against motivational deficiencies as a threat to validity. Emphasize the importance of accurate report on all interview questions and full effort on tests to produce valid profiles that permit comparison with known symptom patterns
2. Rely on standardized, validated and well normed procedures and tests and use only appropriate normative data for comparisons. Take into account symptom base rates (i.e., how frequently the symptoms occur in the general population and in the absence of the injury for which they are being evaluated), other explanatory factors for symptoms (e.g., medications, sleep disturbance, depression, PTSD), symptoms typical for the medical condition (e.g., inherent somatic complaints of disorders like M.S., Parkinsons disease and chronic pain), relevant situational variables (e.g., attention fluctuation due to chronic pain conditions, fatigue, insomnia/sleep deprivation, chronic stress), sociocultural factors (e.g. rural impoverished backgrounds) and other contextual factors and considerations.
3. Avoid joining the attorney-client "team," respect role boundaries (e.g., treating doctor, expert, trial consultant) and emphasize objectivity.
4. Arrive at opinions only after review of all available evidence.
5. Monitor excessive favorability to the side of the retaining party. Objective opinions should vary in the same manner that truth varies. Balanced opinions are characterized by elements that are favorable to each side in the medicolegal context, both in terms of findings in any one case and for the sample of cases represented. Notably, Brodsky<sup>29</sup> and



**Table 4: Diagnostic Complexities**

Genuine Pathology	Residual Functional Impairments	Residual Impairments On Examination, Testing
1. Yes	1. Yes & Exaggerated	1. Yes & Not Exaggerated
2. Mixed	2. Yes & Not Exaggerated	2. Yes & Exaggerated
3. Indeterminate	3. No & Exaggerated	3. No & Exaggerated
4. No	4. No & Not Exaggerated	4. No & Not Exaggerated

Martelli, et al<sup>30</sup> have attempted to offer very preliminary guidelines regarding the expected rates of disagreement in diagnostic conclusions (e.g., 25%).

6. Dispute the opinion of other experts only in the context of a complete and accurate representation of the other expert's findings, inferential reasoning and conclusions.
7. Spend sufficient time evaluating and treating the patient population that you offer testimony about.
8. Attempt to devise and employ a system that allows for monitoring the validity of diagnostic and prognostic statements against external criteria (i.e., actual social and occupational functioning).
9. Develop a mechanism that facilitates feedback from peers on quality and objectivity.
10. Recognize the limitations of medical and neuropsychological opinions, as few findings and symptoms are black or white or attributable to a single event (e.g., Ockam's Razor).
11. Promote increased awareness of relevant issues relating to ethics and scientific objectivity, and utilization of objective data, such as Brodsky's objectivity ratios<sup>29</sup> or the suggestions provided by Martelli, et. al<sup>1, 30</sup>.

## CONCLUSION

Especially in medicolegal evaluations, assessment of response bias is critical to ensuring accurate determination of symptom source or diagnosis and thereby appropriate decisions on treatment and compensation, and the prevention of iatrogenic complications. As much as possible, assessment of motivational issues should integrate information from a variety of sources rather than rely on individual indicators. Although there are many techniques to assess response bias, the methodology is still developing. At present, determination of response bias largely relies on clinical skill and judgment, without recourse to any simple tests and/or decision making algorithms. The more challenging problems include ferreting out mixtures of exaggeration and true symptomatology, understanding what aspects of response bias are consciously versus unconsciously determined, and appreciating what may be modified by psychosocial or biomedical manipulations. Further work is needed to disentangle and measure the impact of the variety of types of responses biases. Finally, evidence suggests that the nature of the adversarial medicolegal system may be as important an impediment to post injury recovery as any

patient variable, and addressing its impact on response bias would seem to be an efficacious approach to enhancing neuropsychological and neuromedical assessment. ♦

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I found the article "*Masquerades of Brain Injury*" interesting since much of its focus was on the detection of response bias, or as many call it in the legal field, malingering. It essentially comes down to the old adage that "there is no pain if there is no gain." Unfortunately, this trumpet has been sounded so often in court houses, at mediations and arbitrations, that it has lost some of its effectiveness. The defense claim is often dismissed by arbitrators, mediators and judges as mere surplusage and "attorney banter." We may have talked ourselves out of what was once a viable and reasonable argument.

The problem is that attorneys are not doing their homework before using the argument. Just as we need objective evidence in support of a liability argument, we also need objective evidence of malingering. Each plaintiff does not fit into the same treatment and billing "peg"; some people legitimately require more treatment and others less. We have developed a habit of falling easily into certain formulas of what is "reasonable" treatment for a certain type of accident, i.e. three months of chiropractic care for a rear-end \$2,000 impact, and fail to truly analyze the claim and determine what is appropriate, reasonable and related. We have become litigating automatons.

"*Masquerades of Brain Injury*" gives us some of the objective criteria that we can review. The authors references comparisons between reported symptoms and examination findings, physical findings and reported complaints. This is just a portion of the overall analysis and comparisons that can, and should be made when making an objective decision of whether malingering is actually occurring. Some additional comparisons that can be made include the following:

- Discovery responses versus Deposition Testimony
- Depositions Testimony versus Medical Report Findings
- Actual Accident Facts and Damages versus Medical Report Accident Descriptions
- Police Report Information versus Deposition Testimony or Medical Reports

Additional issues to consider include the plaintiff's age, prior health history, prior and subsequent additional injury events, and, most importantly, their presentation ability to accurately describe their injuries at deposition. A plaintiff's deposition provides a wealth of information to an observant deposer including his/her demeanor, dress attire, athletic versus non-athletic presentment, eye contact and whether there are spontaneous and honest pain responses during the deposition, versus a "convenient" presentment of residual pain. I had one woman start to moan and demand to sit on the floor during her testimony due to her residual "excruciating" back pain during her deposition, after sitting "pain free" for three hours of her husband's deposition and two hours of her deposition. It was only when we discussed her claimed injuries that she suddenly "remembered" she had "agonizing" and constant back pain.

I had another woman suddenly regain her sight during her deposition, after seeing a "film" for over three months across her vision that precluded her from reading or seeing distances. She forgot the "film" while reading her medical report in her deposition and suddenly had her sight "restored." These sudden epiphanies actually occur when the deposition is set up properly, and would be comical if the plaintiffs were not so overbearing. It can sometimes be worth the cost to video tape a plaintiff's deposition; seeing a sudden "recall" of injury can be very dramatic, and more importantly, spontaneous. You cannot take back an action once it is on tape.

It is important when appearing in an adversarial setting to have objective, easily understandable and substantiated evidence of a plaintiff's actual malingering behavior. It is not enough to bemoan the length of treatment, solely on a general belief it "is just too long for a minor damage accident." A litigator should be able to point to some, or even all, of the issues referenced above including a lack of objective findings of injury by plaintiff's treating facility, inconsistencies between the police report, plaintiff's testimony and/or the medical reports or, at least, poorly described and substantiated injuries and treatment from the plaintiff at deposition. All of these considerations can then be weighed by the trier of fact, whom undoubtedly will be very impressed with the thoroughness and completeness of the arguments presented.

Break out of the box and take the malingering argument to its proper and well founded conclusion. However, if the argument is without a sturdy foundation, move on to other issues including liability, reasonableness of the costs of treatment, or expert opinions and reviews. Don't compromise the integrity of your presentation with a "canned" argument regarding malingering, it will only compromise your own presentation and veracity.