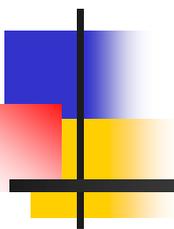


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# **Sub-Optimal Effort in Neuropsychological Evaluation**

**Mary Pepping, PhD, ABPP-CN  
Associate Professor  
University of Washington**

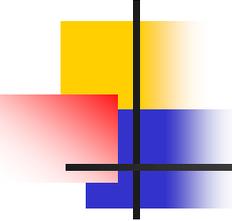


# What do we mean by sub-optimal effort in NPE?

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Webster's definition of sub-optimal:

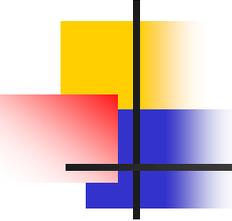
"Below, or under, the best or most favorable degree of..."



# What are the implications of sub-optimal effort for neuropsychological evaluation?

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- We are not obtaining the examinee's best efforts throughout the evaluation
- Test results cannot be considered valid indicators of the person's actual abilities or deficits in the domains measured
- Variability in performance will likely not conform to normal variability, nor to expected patterns of ability and deficit

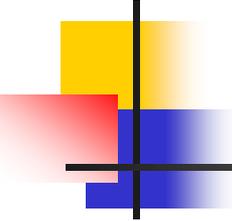


# Further implications

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The problem of “Fleas and Lice”  
(Herbert J. Cross, Ph.D., 1978)

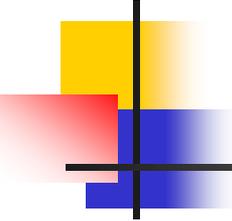
Patients with bona fide neurological illness or injury may also present with sub-optimal effort



# Case example - Severe TBI

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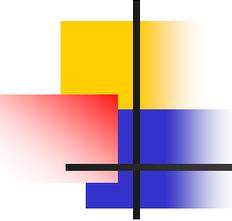
- Patient with severe TBI (GSC 6) and exaggerated deficit responses
- Context: Defense Legal Referral
  - TOMM - grossly invalid
  - Clinical presentation
  - Sentence completion task



# Case Example - SPMS

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- Patient with 25 year history of RRMS, now Secondary Progressive MS
- Referred by Disability Insurance Company
  - Prior limited NPE data available for comparison
  - Poor TOMM-Day 1; Perfect Hiscock-Day 2
  - Yet excellent scores on most NPE measures, except profound memory impairment on tasks the patient perceived as memory measures
  - Clinically tangential, word retrieval, speed



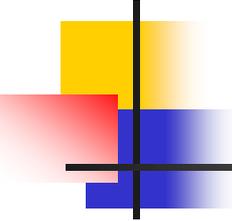
# Economic factors

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“The green poultice”

(Wilbur E. Fordyce, PhD)

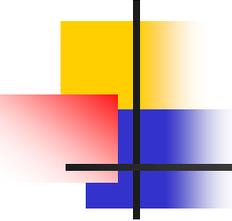
- Litigation and financial settlements based upon deficits
- Disability income and pensions
- Family pressure to be disabled for reasons of economic security



# Social factors

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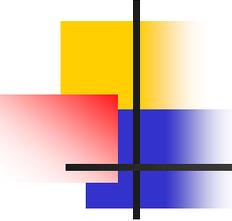
- Pressure from family to resume old role
- Pressure from family to be disabled
- Poor pre-injury relationship with work supervisor
- Loss of original job and/or company
- Work is not valued by peers



# Personal factors

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- Medical diagnosis more acceptable than pre-morbid labels and limitations
- Socially acceptable means to escape adult responsibilities
  - Work
  - Intimate relationships, sexual preference
  - Parenthood
  - Child-rearing

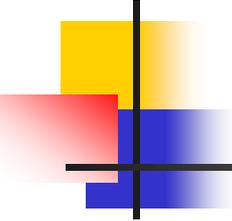


# Specific psychiatric diagnoses may increase the risk of sub-optimal effort

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## Axis II Personality Disorders or Features

- Somatoform
- Conversion
- Narcissistic
- Anti-social
- Borderline
- Dependent
- Avoidant

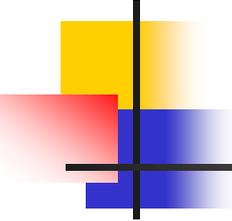


# What other factors increases the risk of sub-optimal effort in NPE?

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## Reactive Emotional Problems or Other Pre-Injury Psychiatric Vulnerabilities

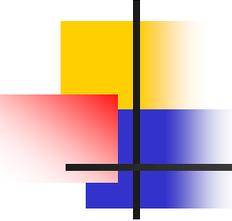
- Anger at injury or illness
- Desire for justice
- Fear re: future financial viability
- Major depression
- Major anxiety or panic disorder
- Post traumatic stress disorder
- Substance abuse
- Bipolar disorder



# Physical and medical factors in sub-optimal performances

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- Fatigue or reduced endurance
- Chronic sleep deprivation
- Headache, neck pain, back pain
- Medication effects
  - Opioids
  - Benzodiazepines
  - Anti-convulsants

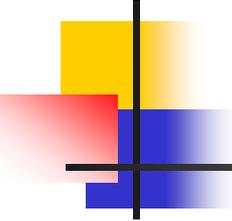


# How do we measure and otherwise gauge sub-optimal effort?

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## Tests specifically designed to measure effort

- TOMM
- Word Memory Test
- Portland Digit Recognition
- Hiscock Digit Recognition Test
- MMPI and MMPI-2 Validity Scales
- Hiscock Abbreviated Research Version – 36 items
- Rey 15 Item with Delayed Recall

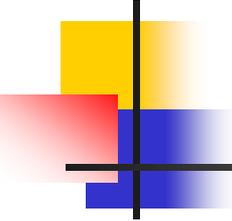


# How do we measure and otherwise gauge sub-optimal effort?

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Patterns of other test performances found to be associated with sub-optimal effort

- Digit Span
- WMS-R Mental Control
- CVLT Forced Choice
- Fail easy items, do well on difficult measures
- Failure to benefit from practice
- Bizarre reproductions of designs or figures
- Discrepancy between severity of tested impairments and injury severity or injury type



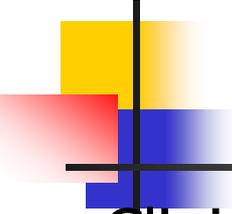
# How do we measure and otherwise gauge sub-optimal effort?

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## Clinical observations:

Interview behavior that raises the index of concern about sub-optimal effort:

- Poor or excessive eye contact
- Limp handshake
- Unusual or dramatic gait, not in keeping with injury
- Excessively friendly or fawning comments
- Unusual stuttering or halting qualities to speech
- Child-like speech in context of minimal injury
- Rocking in chair during interview or testing
- Trouble supplying personal facts, e.g., date of birth, siblings' names, high school attended



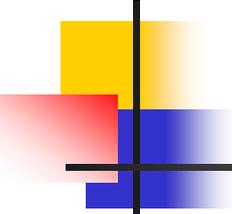
# How do we measure and otherwise gauge sub-optimal effort?

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## Clinical observations (continued):

Interview behavior that raises the index of concern about sub-optimal effort:

- Dark glasses and cane at 2 years post possible mild concussion
- Strange or unusual tremors
- Tone of victimization to reports of problems
- Pre-occupation with how entire life has been ruined by minor accident
- Endorses all possible symptoms and problem areas
- Reports very few abilities or strengths that haven't been changed
- Exaggerated report of pre-accident abilities and achievements
- Extensive family history of work related accidents and early pensions



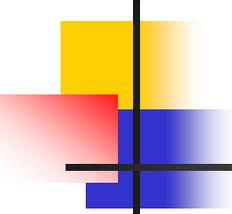
# How do we measure and otherwise gauge sub-optimal effort?

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## Clinical observations (continued):

Historical information of concern for patients with mild possible injuries:

- Patient had poor relationship with immediate supervisor at work
- Patient has abandoned almost all usual roles and activities
- Other family members have taken over most duties of daily living
- Patient no longer drives
- Patient can't make change or pay bills without errors
- Patient is very content with all of the family support he or she is receiving
- Patient asks if a chore worker or independent living aide can be assigned
- Patient applies for a therapy dog



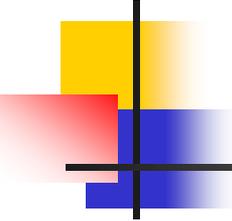
# How do we measure and otherwise gauge sub-optimal effort?

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## Clinical observations (continued):

### Test behavior

- Early and intense complaints about task difficulty, esp. on easy items
- Frequent requests for breaks, or ice packs
- Early reports of fatigue from testing
- Long response latencies
- Can't perform very easy tasks, e.g., 2-block Block Designs correctly
- No demonstrated ability to learn with practice (e.g., word pairs)
- Manipulative behaviors, e.g., making an extreme symptom claim then covertly watching interviewer for reactions
- Extremely poor performances on tasks that patient believes measure his or her reported problem areas, but normal performances on other less obvious measures of those same domains

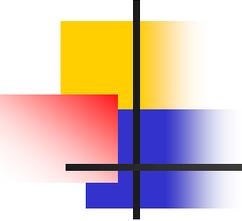


# How do we measure and otherwise consider sub-optimal effort?

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## Feedback session behavior

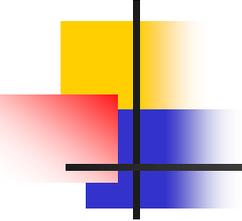
- Negative reactions to good news about preserved abilities
- Lack of genuine interest in any treatment plan
- Lack of interest in any return to work plan, or
- Indicates an interest in RTW, then “Yes, but(s)...” all viable options to achieve a return to work
- Irritability with family members who expect a return to normal function
- Family members who foster or support dependent role in patient



# Limitations of test validity measures and implications for sub-optimal effort

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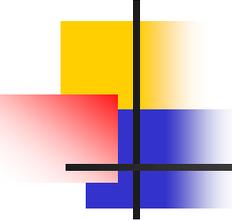
- Necessary but not sufficient measure of test validity
- Formal measures of effort can't be given continuously throughout evaluation
- Some good measures are very time-consuming
- Some are irritating for patients (and staff!) to take
- There are a limited number of well validated measures
- Can complicate subsequent memory performances, e.g., interference effects
- Can add significant amount of time to test battery
- A patient may have significant injury and deficits, but is so afflicted with "compensation neurosis" that test score levels or patterns truly mask underlying neurological impairments



# Recommendations

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- Always give a formal measure of effort
- In legal/disability context: TOMM or WMT
- If Day Two of testing, give add'l validity measure(s)
- Look for "validity themes" in the overall pattern of evaluation results, and across the findings' domains
  - Prior records - any concerns raised about symptom validity?
  - Interview impressions
  - Behavioral observations and comments from psychometrist
  - Are areas of cognitive ability and difficulty consistent within domains, e.g., simple versus complex attention, stages or types of memory, types of reasoning, speed of performance
  - Are these areas consistent with disease type or injury



# Recommendations (con't)

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- Questions to ask yourself:
  - If this person wanted to work, would their NPE pattern of ability and deficit support RTW success?
  - Are there alternate explanations to their sub-optimal effort, besides conscious malingering?
  - Can you write the report in a fair and respectful fashion, and help the reader understand the likely reasons for sub-optimal performance?
  - Can any of those reasons be treated or improved?
  - In the context of fairness, what recommendations are in the patient's best interest?