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**NEUROPSYCHOLOGICAL EVALUATION**

**Patient:** Robert Fancher  
**Age/Date of Birth:** 25, 11/4/83  
**Referring Physician:** Howard Cohen MD  
**Presenting Diagnosis:** Cognitive complaints, traumatic brain injury  
**Reason for Referral:** To evaluate cognitive complaints  
**Date/s of Evaluation:** 7/19/08, 7/26/08

**Procedures Administered:**

- Clinical interview of patient
- Psychosocial history
- Review of records: Neuropsychological evaluation by Joan Mayfield (August 24, 2002). Clinical notes by Dr. Cohen.
- Face to face evaluation was initiated at 8:30 AM and completed at 3:15 PM with 1-hour -minute lunch break. The assessment battery is listed in the addendum. I met with the patient and his parents for an hour on 7/26/08 to gather further information from them and provide them with feedback and suggestions for future treatment.

**MENTAL STATUS/ BEHAVIORAL OBSERVATIONS:** The patient was appropriately dressed and groomed. Ambulation was unremarkable. No gross motor or sensory deficits were noted which would impact participation in the evaluation. Thought was coherent and goal oriented. Language was within normal limits in conversation. Speech was somewhat very mildly indistinct and slow. Interpersonal skills were appropriate. He often sighed and appeared to have low energy.

**PRESENTING PROBLEM:**

History: On March 29, 2002, Mr. Fancher suffered a traumatic brain injury as well as orthopedic and other facial fractures when he ejected from a motor vehicle. Initial Glasgow scale was a 10. After surgical intervention, on April 4, 2002 he was transferred to Our Children's House for rehabilitation. He was alert and oriented in all spheres at that time. The patient reported he had no memory for the first 2 weeks following the accident. When he "awoke" he could not recall the previous 6 months but most of this recall returned. In rehabilitation, he demonstrated higher order cognitive problems. According to the patient's father, the patient also suffered visual problems to the degree

that it was feared he might lose his vision. He was treated with corrective lenses with some success although he still has problems with peripheral vision.

A neuropsychological evaluation on August 24, 2002 revealed above average general intellectual abilities and performance on most tasks was average to above average. He did demonstrate difficulty maintaining attention and memory abilities were in the average to low average range.

Since that time Mr. Fancher completed a year at Richland College and graduated in fall 2006 with a Bachelor's degree from University of Texas. He earned a 3.25 GPA. He hosted a radio show and was actively involved in clubs relating to his area of study in new media. He wants to apply for graduate school but did not do well on his first trial of the Graduate Record Exam.

He reported that pain was not a major problem in the first year after the injury and he did not take pain medications during that time. Since that time pain has become a problem and has been treated with opioids. He has also been treated with physical therapy and completed the PRIDE program. He has participated in extensive psychological therapies including working with 3 or 4 psychologists or counselors.

Current medications include METHADONE, CLONAZAPAM, ZANAFLEX, LYRICA, YVANSE, HYDROXYZ HCL, and AMBIEN. Side effects include sedation but he finds the Yvanse helpful.

He currently lives with his parents. He does not hold a full time job but does some part work with his hobby, working as a disc jockey for parties. He is studying to retake the GRE.

Current Complaints: He reported that he has problems with recalling information if he reads more than a few paragraphs. He continues to have problems in expressive vocabulary and word finding. He feels he is still slower in his cognitive operations.

He continues to experience pain. As a result of the surgery to his femur his gait is different and he experiences back pain. He continues to have some facial pain. Current pain intensity was a 2 or 3 using a 1-10 scale. It has been a 5 or 6 at worst in the last week.

He reported being in generally good spirits because he is now working towards a goal. He denied any suicidal ideation. He sleeps well but goes to be between midnight and 4:00AM and arises between 10:00 and 12:00. He had deliberately lost 100 pounds but has regained some of that. He still appears overweight. He denied suicidal ideation. He reported that others have observed that he is more pleasant and less irritable than he was before the accident. He reported having panic attacks a year ago but none in the last 6 months. He has mild anxiety.

**PERSONAL BACKGROUND:** He was reared by his parents. His father works for Wachovia Bank and his mother is a teacher. He has one sister. Childhood years were unremarkable with no history of developmental problems or learning disabilities. He was in a program for gifted students from 3<sup>rd</sup> to 6<sup>th</sup> grade. Prior to his accident, he had scored a 1280 on his SAT, was in the upper 40<sup>th</sup> percentile of his class, and had been accepted to several universities. He has never been married and has no children.

**FINDINGS:**

Motivation/Effort: Within normal limits based on clinical presentation, pattern of performance on testing, and formal assessment of effort on the WMT.

Estimate of Premorbid Ability: Educational and vocational history suggests premorbid abilities in the high average range using the Barona formula. Reading recognition on the NART, generally a good estimator of premorbid ability since it is resilient to brain injury, suggested a premorbid intelligence in the high average range.

General Measures: Performance on the WAIS-R indicated global performance in the high average range. Performance IQ was weak relative to Verbal IQ scores. Index scores were notable for very slow Processing Speed relative to other indices.

| Scale                   | IQ/ Index score | %ile Rank | Description  |
|-------------------------|-----------------|-----------|--------------|
| Verbal                  | 119             | 90        | High Average |
| Performance             | 98              | 45        | Average      |
| Full Scale              | 110             | 75        | High Average |
| Verbal Comprehension    | 120             | 91        |              |
| Perceptual Organization | 111             | 77        |              |
| Working Memory          | 115             | 84        |              |
| Processing Speed        | 71              | 3         |              |

*Caveat: Whenever possible, during the following analysis of relative strengths and weaknesses in cognitive domains, normative data is used correcting for demographic factors including both age and education.*

Attention/ Concentration: Basic ability to focus attention was unremarkable. *Concentration to more complex stimuli (i.e. working memory) was average* for a person of his age and education and at the 84<sup>th</sup> percentile rank for all persons his age. He performed in the average range on his ability to retain sequences of information (i.e. consonant triads) despite a distracter task. This task has been found to be sensitive to head injury in other studies.

Speed of Processing: There was *marked variability* on these measures with *impaired performance on several tasks* and above average performance on another task. Compared to other persons of his age and education, speed for coding of symbols was below the first percentile rank and speed for comparison of simple visual forms was at the 2<sup>nd</sup> percentile rank. Speed for connecting numbers in sequence was in the low average to borderline range. However, on a cancellation task requiring rapid scanning of detailed visual stimuli, he performed at the 93<sup>rd</sup> percentile rank.

Sensory/ Perceptual: Not assessed. No gross problems had been reported or seen clinically.

Motor: The patient is right handed. Motor skills were assessed using Luria movements. He demonstrated *no gross problems*. Additional testing was not characterized since he had not demonstrated deficits in this area in the evaluation completed shortly after his injury.

Visual/ Spatial: Performance was *variable on these measures with some evidence of impaired performance*. Identification of salient details from pictures was average but mildly weak for his education. Rotation of blocks to match a model was average on timed tasks. However, performance was impaired in his ability to draw a complex geometrical form placed in front of him. He did not appear to plan well, shapes were distorted, and he was inattentive to details.

Language: Receptive language was not assessed but he demonstrated no problems clinically in the conversation or in obeying complex instructions. *Word finding on a confrontational naming task was in the impaired range* (below 1<sup>st</sup> percentile rank) for his age and education. He could not name a ladle, a crib, asparagus, or a clothespin.

Learning/ Memory: *Learning and memory for oral verbal material was in the average range but learning and recall of visual material appeared somewhat weaker but were within normal limits.*

- *Auditory Learning:* Learning and immediate recall of short stories, word pairs, and word lists all were within the average range with average retention after a 20 minute delay. Organization of the word list into semantic categories to help encoding was average.
- *Visual Memory:* Compared to other persons of his age and education, recall of details from pictures of everyday scenes and recognition of faces was in the low average range with normal retention after 20 minutes. However, delayed recall of a complex figure he had drawn earlier was mildly impaired. However, since his initial copy was poor, the problem appeared to be one primarily of initial accurate encoding rather than retention.

Reasoning/ Problem Solving: Performance was in the *average to above average* range. Compared to other persons of his age and education, verbal concept formation was

average but reasoning for visual forms and patterns was above average (88<sup>th</sup> percentile rank).

Executive Functioning: There was *no evidence of problems in shifting mental sets or with disinhibition*, but there was very weak evidence of some perseveration, and *clear problems initiation of response for verbal fluency*. Despite some variability he demonstrated some impairment in some aspects of executive functioning. He could use feedback on a sorting task and could shift mental sets fluidly. He did not demonstrate disinhibition on motor “go/no go” tasks. Neither did he demonstrate difficulties with inhibition of attention on a color/word reading task. On several tasks he repeated forms more than indicated on the stimulus which may demonstrate very subtle perseveration but this was not consistently found on other tests. However, he performed in the impaired range on tasks requiring rapid initiation of word lists beginning with specified letters or from a semantic category.

Emotion/ Personality: Testing with the PAI resulted in a profile which could be validly interpreted. The profile was notable for very high levels of somatic complaints and concerns even compared to other persons with chronic pain (90<sup>th</sup> percentile rank) and traumatic brain injury (97<sup>th</sup> percentile rank). Persons with this profile are complaining of a variety of unusual somatic complaints and perceive their health problems to be markedly adversely affecting their life. The profile did not provide evidence of significantly elevated anxiety or depression at this time. He did report mildly elevated concerns still over a past traumatic event. Finally, the profile did suggest an inflated sense of self and a belief that he has unique talents and abilities. This evaluation may not be realistic.

**SUMMARY**: Approximately 6 years following his head injury, Mr. Fancher demonstrates above average abilities in multiple areas but with some areas of continued weakness.

- Verbal comprehension, complex concentration (i.e. working memory), learning and recall of verbal material, and reasoning were all in the average to above average range.
- He performed in the impaired range on several tasks requiring rapid visual processing and scanning but was above average on a timed cancellation task. This may represent a deficit when he has to rapidly shift back and forth between visual stimuli.
- There was variability on visual spatial tasks with impaired performance when he was required to plan and copy a complex form.
- Learning and recall or recognition of visual material was low average but within normal limits.
- Vocabulary was superior but with problems in word retrieval either for confrontational naming or verbal fluency tasks. This may represent both problems in word retrieval and perhaps subtle problems in initiation.
- Testing suggests that he is highly preoccupied with somatic problems which may result in excess impairment in function in daily life. Depression and anxiety were not remarkable on testing.

- The pattern of strengths and deficits is generally similar found in his previous neuropsychological testing 6 months after his injury. However, performance on some of the tests of speed of visual scanning appeared worse relative to his earlier testing.

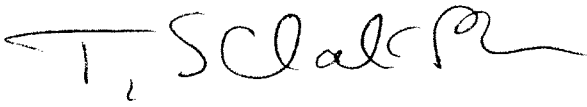
**CLINICAL HYPOTHESIS:** Mr. Fancher's current presentation does represent continued deficits associated with his head injury in my opinion. He has been successful academically since that time and is to be commended for his completion of a Bachelors degree from an excellent university. In my opinion several issues continue to impact his current functioning.

- First, on tasks requiring rapid visual scanning and comparing he performed in the clearly impaired range relative to other abilities. This had been found in his first evaluation. In my opinion this may represent problems in the visual system rather than generally cognitive processing since his complex concentration was strength.
- Second, interpretation of current findings is challenging in light of the multiple medications he takes which could cause problems in concentration and speed of processing. Some of his deficits may represent a combination of impairment secondary to injury, side effects of medications for sleep, and results of restful sleep. His parents did report their perception that cognition and alertness was impacted by his medications but that effects are significantly less than when he was on some other medications in the past. In addition, the slow performance noted one task (Symbol Search) was much worse that when originally tested. This is somewhat surprising and is likely to reflect other issues rather than the original brain injury.
- Third, the patient has taken on some unhelpful behavioral patterns, which could adversely affect him in the future. Without the challenge and structure of school, he appears to have become relatively inactive and often sleeps much of the day. When asked why he was not working during the year he was trying to get into school, the patient reported that he had to find a job which would take into account his pain and need for rest during the day.

### **RECOMMENDATIONS:**

1. The patient does appear appropriate for accommodations for time in taking the Graduate Record Exam. His limitations secondary to his injury and medications do cause slowing which could impact his performance on timed tests.
2. The patient would profit from behavioral health intervention counseling with a focus on teaching him how to minimize somatic focus, set goals, and increase self efficacy as he pursues future plans.
3. In my observation, patients with high levels of somatic preoccupation often are willing to demonstrate pain behaviors, have poor tolerance for minimal medication side effects, and often excessively seek additional medical help. In light of this, it may be appropriate for health care providers to work actively to maintain stability in treatment, minimize medications that result in cognitive side effects, and reinforce to the patient the need to normalize his schedule and assume responsibilities of a young adult.

Thank you for this interesting referral. Please let me know if I can be of further assistance.

A handwritten signature in black ink that reads "T. S. Clark" followed by a stylized flourish.

Timothy S. Clark, Ph.D.  
Licensed Psychologist

## ADDENDUM

### Tests Administered

#### General:

- Wechsler Adult Intelligence Scale –III (WAIS-III)
- National Adult Reading Test (NART)
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#### Motivation/Symptom Exaggeration:

- Word Memory Test

#### Concentration/Attention/Set Shifting:

- Trail Making Test
- D2 Test
- Consonant Trigrams Test

#### Language

- Subtests of the language module of the Neuropsychological Assessment Battery
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#### Motor

- Luria Motor tasks – finger tip, open close, fist/side/palm

#### Visual/spatial:

- Rey Osterrieth Complex Figure Test

#### Memory

- California Verbal Learning Test-II (CVLT-II)
- Wechsler Memory Scale – III (WMS-III)

#### Problem solving/Executive

- Luria motor tasks
- Wisconsin Card Sort Test
- Stroop Neuropsychological Screening Test

#### Emotion/Adaptation:

- Personality Assessment Inventory