Johnson Neurological Center
Vancouver, WA

Gordon Johnson[1]
Diplomate Neurology (ABPN), Diplomate Pain Medicine (ABPN)

Date of Report, August 10, 2009

Price GP
Lisle – Psychiatrist
DVR Moore – Neuropyschologist.. Battery I 118 – Battery II – 122

Emily Brown, Sister of Patient – Collateral Interview
Cranial Nerve I – one sided

DIAGNOSTIC HEAD INJURY EVALUATION
Mary Brown
DOB: 6-06-68
Date of Accident: 6-12-2008

According to the police reports, the patient was involved in a motor vehicle accident where the vehicle she was riding in struck a furniture delivery truck which had turned left in front of her ongoing vehicle. There was extensive damage to the patient's car, a Toyota Prius, with airbag deployment. The patient struck her head on some part of the interior of her car, with facial bruising and also a bruise on her neck from the seatbelt.

It is clear from a review of the 911 tapes and the witness statements that the patient was unconscious for a period of approximately five minutes. After recovering consciousness she was transported to the Mesa Emergency room where she became confused and agitated, was fighting her restraints, was confused about why she was in the hospital and was ultimately sedated in order to make it possible for her to have a CT scan done upon her. Prior to the CT scan being performed, she was diagnosed with a subarchnoid hemorrhage, which was confirmed by the CT scan. The CT also show right frontal brain injury. She was hospitalized for two days, with a return to normal Glasgow Coma Scale by approximately 6 hours post accident, at the time the sedation wore off.

EMT's had reported to the Emergency Room personnel that the patient was unconscious for a short period of time after they arrived on the scene, approximately five minutes after the 911 call. **She did not have any recollection of the accident nor a period of roughly 20 minutes before the accident.** Her ability to report was limited to complaints of pain to the back of her head and to her neck. Her neurological exam was reported as

[1] This is a fictional report. Gordon Johnson is not an M.D. but an attorney, from Sheboygan, Wisconsin, who is the past Chair of the Traumatic Brain Injury Litigation Group.

essentially normal, except with respect to amnesia. She had no facial weakness, her extraocular muscles were intact. Her extremity motor strength and sensations were also reported as intact.

CT scan of the neck revealed degenerative disease at C6-7 with spurring and degenerative disease appearing to be significant particularly on the right at C6-7 with some foraminal stenosis on the left at C6-7, as well.

The patient was released three days after her accident with the diagnosis of Closed Head Injury.

The patient next treated with her family doctor, Dr. Price, two days after the discharge from the hospital. Dr. Price's report of June 15, 2008 describes continuing neck and head pain and included a diagnosis of **Mild Traumatic Brain Injury**. She followed up with Dr. Price each week until she was given **a return to work on July 7, 2008**, approximately three weeks post the accident.

After the patient's return to work at Mesa Bank, she received no medical attention until the beginning of September. In September, without a referral from Dr. Price, the patient was next seen by a **psychiatrist, Dr. Lisle of Mesa Mental Health Services** for problems she was having at work. She had treated with Dr. Lisle for five years, sporadically prior to her accident for pre-accident anxiety problems. She had been taking Celexa at the time of her accident.

In September of 2008, after the accident, Dr. Lisle did an extensive exam on the patient including a long clinical interview and a neurological exam. The neurological exam was described as normal, except with respect to the patient's memory, that was described as sub-par. The clinical interview revealed that the patient had been having **progressively more significant problems at work since her return to work as a Personal Banker. She reported that she had difficulty with concentration, multi-tasking, memory and temper. She explained that she was becoming increasingly anxious and that she would work long hours, having to stay late to finish her work after the others had left for the day. She told Dr. Lisle that she was able to work more efficiently when she was the only one there.**

She reported to Dr. Lisle problems with sleep, fatigue and severe headaches. Dr. Lisle ordered a sleep study and an EEG, both which reported as essentially normal.

Dr. Lisle who had treated the patient periodically for anxiety problems in the years before the accident found her to have had a change in **personality from the patient he had treated prior. He gave her a diagnosis of Post Concussion Syndrome and Post Traumatic Migraine. He took her off work for an indefinite period of time.** She continued to treat with Dr. Lisle for her brain injury symptoms. I was retained to do a forensic neurological examination by her attorney and took over her primary neurological care in August of 2009. Dr. Lisle is still her psychiatrist.

Dr. Lisle referred her in November of 2008 to speech and occupation therapy with Novo Rehabilitation Services. **She was subsequently evaluated by the State of Washington rehabilitation services for vocational counseling (DVR**), As part of her DVR evaluation, she was seen by a DVR selected neuropsychologist, Dr. Moore. **Dr. Moore's testing showed Ms. Brown to have an IQ of 118, significantly raised MMPI scales and significant decrements in processing speed and attentional concentration sub-tests.** Dr. Moore gave Ms. Brown a diagnosis of MTBI, Post Concussion Syndrome and an aggravation of her preexisting anxiety disorder. As part of her DVR program, Ms. Brown enrolled at Mesa Community College in January of 2009 and completed one semester of work towards a career in paralegal studies, **with a GPA of 3.3. She did, however, drop two of the five classes she started. The DVR records also indicated that Ms. Brown had missed 16 days of classes during the semester.**

After the completion of this semester of school, DVR requested a follow-up examination and opinion from both Dr. Moore and Dr. Lisle. **Both agreed that the patient could not tolerate working in an office environment with significant stress, multi-tasking demands and emotional challenges of getting along with her co-workers.**

Ms. Brown was described by Dr. Moore as perseverative, labile and emotionally exhausting to treat. While Dr. Moore reported that her IQ had now risen slightly to 122, she still had significant decrements in processing speed, attention and concentration and that her clinical interview seemed even more labile and perseverative.

Dr. Moore and Dr. Lisle both noted her **frequent emotionally charged telephone calls** and her inability to grasp the subtleties of the advice they were giving her. They also both reported that Ms. Brown had **become increasingly socially isolated and seemed to have lost contact with her friends and had alienated most of her family members**. Dr. Moore described Ms. Brown as living alone, rarely leaving her apartment and not attending to her appearance, **even though she was said to be fully functioning in the activities of daily living.**

As stated by her psychiatrist, Dr. Lisle: "While the patient knows how to cook, dress and care for herself, she seems disinterested in any of these activities, except when prompted. Before the accident, she always dressed professionally, hair perfectly kept, makeup faultless. Now, she presents in sweat pants, t-shirt with no makeup and her hair combed, but not set. " Dr. Lisle also reported that Ms. Brown would become emotionally agitated with the change in any routine or any unexpected events, **as documented in the 33 phone calls she had made to his office in the preceding six months.** He also reported that she was becoming increasingly obsessed with her lawsuit to recover compensation for the injuries suffered in her accident of **June of 2008 and uncontrollably agitated at the defense neuropsychologist.**

The patient has never returned to work.

The patient underwent a follow-up MRI ordered by Dr. Lisle on September 20, 2008 at Open MRI of Mesa. Such MRI was read as normal.

I referred the patient for an MRI at Nevada Imaging Centers on a 3.0 Tesla MRI, which was performed on 8-24-09, more than a year after the subject accident.

INSERT STIMAC'S SUMMARY

Patients Pre-Accident Medical History.

The patient also has a long history of anxiety disorder. She first was treated for emotional/psychiatric issues when her parents got divorced when she was 11. She finished high school and three years of college without interruptions for emotional problems. She did not finish her college ("couldn't decide what I wanted to be, so why get a degree in it") and began working in the mortgage business at age 23. At age 34, in 2003 she started seeing a counselor, Julie Cliff because of depression she had subsequent to her breakup with a long-term boyfriend. Ms. Cliff is a licensed clinical social worker and works for Great West Counseling.

Counselor Cliff referred her to Dr. Lisle, her current psychiatrist after 90 days. **Dr. Lisle at that time diagnosed her with an anxiety disorder and tried her on a several anti-anxiety medicines for a period of about six months, finally settling on Paxil.** She stayed on the Paxil for approximately one year but was successful in discontinuing the medication thereafter.

Dr. Lisle's records in 2003 also included discussion of the patient's tendency to be overly compulsive about her work and housekeeping, even though these problems did not raise themselves to the level of a formal OCD diagnosis. He reported that these difficulties had likely played a part in the break up with her boyfriend but appeared to have improved her work performance, making her more of a perfectionist in a business where mistakes were costly.

Counselor Cliff treated the patient on and off in the years previous to the subject motor vehicle accident in May of 2008. She saw Counselor Cliff for a total of 38 sessions. The records cover all manner of issues Ms. Brown had over these years including relationship problems and stress at work**. Ms. Brown changed jobs three times during that period, including a stint as an assistant manager in a restaurant.** She eventually returned to the mortgage busines, although she has worked for a total of six companies over 18 years. **Counselor Cliff's records include numerous references to stress at work, areas of conflict with co-workers and two references to "hating the mortgage business."**

In the fall of 2007, Ms. Brown returned to Dr. Lisle with increased problems with anxiety and depression. She reported that both of her parents were ill and that she felt increasing pressure as a result of restructuring at her current employer, Bank of Mesa. Dr. Lisle reported that while there did not appear to be any risk of disciplinary action against Ms. Brown, she was having difficulty sleeping and was becoming overly preoccupied by seemingly innocuous inter-personal problems with her co-workers. Dr. Lisle tried her on Lexapro to treat her depression and anxiety, which caused her significant side effects. Adjusting to the side effects made work even more challenging. **After a 30 day trial of different anti-anxiety medicines, he requested that she be given a two week hiatus from work to help her cope with the side-effects and stress she was feeling. Dr. Lisle reissued the "no work order" two more times and Mr. Brown was ultimately off work from November 1 thru December 10, 2007.** Dr. Lisle reported that Ms. Brown did well on Celexa, which she was taking up through the date of the subject accident in June of 2008.

After her return to work at the Bank of Mesa in December of 2007, she had no further documented work problems prior to the June of 2008 accident. **She received a year end bonus in 2007 and a performance review raise in April of 2008.**

The patient reports that she never missed more than a few days of work from any of the above conditions.

PATIENT INTERVIEW

On 6/12/2008, Ms. Brown was a seat-belted driver, when her vehicle struck a furniture delivery truck which had turned left in front of her at a green light. I have reviewed the police photos of her vehicle, a Toyota Prius and there is extensive damage to the front and side of her vehicle consistent with it hitting a truck turning left in front of her. There is only nominal damage to the truck, but it is clear that both vehicles were displaced by the forces of the collision.

Ms. Brown does not remember getting into her car to begin the trip which resulted in the accident. The last thing she remembers prior to the accident was shopping in Walmart, which is one block away from the accident scene. She does not remember checking out at the Walmart. (*While she does not remember putting her seat-belt on, she states that she always did so and it is clear from the bruising to her neck that she was in fact wearing her seatbelt at the time of the collision.*)

Amnesia

Ms. Brown does not remember being at the scene of the accident at all, does not remember the ambulance ride nor remember being treated and released at the hospital. I spent about 20 minutes discussing what Ms. Brown remembers in the days after the accident and while I do not have the benefit of asking such questions contemporaneously

as her family doctor might have, **it is my opinion that she had some residual amnesia for at least two weeks.**

PTA: Two appts. With Dr. Price
Wearing a cervical collar
Having neck pain.
Doesn't remember pictures being taken.

Among the things she does not remember is being in the the hospital, seeing her family practice doctor, **Dr. Price two days post accident** and being taken off of work. She also doesn't remember any details of **her next visit with Dr. Price a week later**, but does have some memory of her third visit with him when she was given her return to work. She doesn't remember **wearing a cervical collar for one week post accident**, even though Dr. Price's records indicate that she did. **She also doesn't have a clear recollection of having neck pain, which had clearly resolved when I met her, one year after the accident**. She has brought with her pictures of her bruising after the accident, but does not remember having such pictures taken, although she knows that her sister took them. She does remember her return to work, the concern expressed by her co-workers and how little there was for her to do on return, because most of her loan files had closed in her absence. Her memory is clear of the difficulties she had at work as she got busier.

Current Complaints

Concentration/attention
Emotional control
Unproductivity
Headaches
Sleep
Poor decision making
Memory – missed mortgage payments
Mental pain
Anxiety

Ms. Brown's chief complaints are her inability to concentrate, control her emotions and to do anything productive. She also reports severe headaches which began since the accident. She cannot pinpoint a date of onset of such headaches, but says they are among the first thing she remembers after the accident. She has had continuous difficulty with concentration and attention, confusion, feeling as though he is in a boat and he can't get his sea legs. She has noted continuous difficulty with decreased sleep, poor decision making. She states that she can't even make simple decisions - like going to the store and deciding what type of coffee to buy, which now presents major difficulties. (This is a woman who had a successful banking career before the subject accident.)

She also had difficulties with her memory. She missed paying her mortgage. She is no longer able to balance her checkbook. She is no longer able to think things through. Her spelling has deteriorated.

She describes herself as having severe "mental pain" and is very worried about her finances, worried about her employability. She describes herself as having continuous lack of sleep, because she is having difficulty with restfulness, worrying, agitation, nervousness, as well as, pain, and has experienced increasing depression.

She lost a relationship of less than a month that started a few months ago, as she has not been able to sustain it due to all of these difficulties. She feels her anxiety, which has always been something of a problem, is much more severe. She had to refinance her home in order to try to make ends meet.

The patient is now sleepless, tremulous at times, easily startles, and has exaggerated reflex responses when driving. Her headaches are posterior, radiating to the top of her head with pressure, nausea, and some photophobia.

Her headaches are daily, virtually "all of the time." The headache is increased by exertion or activity and improved by rest.

I asked the patient what she felt her top 5 problems were and we were able to summarize them to some extent, though this does not cover all of her difficulties:

1) **Memory loss and confusion.** She notes that she forgets and leaves the water running, not just now and again, but relatively constantly. A simple task such as watering the plants leads to leaving the water on relatively constantly.
2) **Inability to make simple decisions.** Going to the grocery store can leave her in a quandary, trying to make simple decisions about what to buy. Navigating to get here, for instance, to the clinic was a major difficulty.
3) **Employability** is a huge concern.
4) **Headaches.**
5) **Inability to sleep**; Her Ambien is no longer working.

The patient was utilizing some Depakote at 750 mg, but Dr. Lisle recently discontinued it. She did not notice that she was having any improvement or worsening with the Depakote. (One might have conjectured that the Depakote might have had multiple reasons for its benefit, perhaps most of all the migrainous headaches that she has experienced or at least part of the headaches being migrainous, might have been improved).

MEDICATIONS
Medications

Topomax	1/day	for Migraine
Trazodone	1/day	for sleep
Celexa	2/day	for anxiety

PREVIOUS WORK HISTORY:

Mesa Bank, February 2005- September of 2008, Mortgage Processor, ending salary $80,000 inclusive of benefits and bonus
Mountain West Bank, April 2004 thru January 2005
Mortgage Processor, $50,000, inclusive of benefits and bonus,
Alfredo's Italian Restaurant, November of 2003 thru March 2004
Mortgage Processor, $40,000 without benefits
Mountain West Bank, January of 2000 – November of 2003,
Mortgage Processor, ending salary $65,000, inclusive of benefits and bonus Johnson Bank, 1987 – 1988,
Assistant Loan Officer, ending salary $14 an hour.
Bank of America, July of 1983 – 1986,
Assistant Loan Officer, ending salary $10 an hour.
Mesa Bank, June of 1981 – July of 1983,
Receptionist, ending salary $6 an hour.

Prior to this accident the longest period of unemployment between jobs was two weeks.

PERSONAL INFORMATION: The patient is 41-year-old, 5'8", 145 pounds, single woman, never married, with no children. She declined to answer whether she had ever been pregnant. She has three plus years of college but is not on track for any degree. She is not currently enrolled in college. She is a nonsmoker.

ALLERGIES:
Very sensitive to medications.

REVIEW OF SYSTEMS: Positive for fatigue and headaches, loss of appetite, change in bowel movements, nausea and vomiting, frequent diarrhea, decreased libido, recurring headaches, head injury, memory loss, nervousness, anxiety to the point of near panic and depression.

FAMILY HISTORY: Notable for cancer and arthritis in her father; heart disease, cancer, and arthritis in her mother; history of heart disease, arthritis, and stroke in a paternal grandparent; history of heart disease, diabetes, and arthritis in a maternal grandparent.

SOCIAL HISTORY: The patient does sometimes use alcohol and sometimes now feels that she can use it to excess. The patient has no use of tobacco and does not use any recreational drugs other than her medications.

MEMORY LOSS QUESTIONAIRE

The patient was administered a memory loss questionnaire as part of this examination. With regard to a Memory Loss Questionnaire, she definitely feels that her memory loss has affected her job skills. She will be walking and forget where she is going. She forgets daily task items. She forgets passwords; she forgets where she is in a sentence. She forgets familiar tasks and can get distracted extremely easily. She has problems with finding the right words and with language. She gets disoriented to time and place at times. She has decreased judgment, difficulties with abstract thinking, has changes in her mood and behavior, and changes in her personality. She has lost initiative that she ordinarily had (I would again emphasize that this is a person who worked herself up to management positions.) She notes difficulty with forgetting things people just said, forgetting names of people (something that was not formerly a problem for her, as she worked for years with customers in banking) getting lost in familiar situations, getting confused about date or place, getting more anxious and agitated on the background of anxiety, getting more paranoid, more difficulty with being confused.

The patient has had to discontinue church, clubs, and other social activities. She has difficulty now finding her car in easy to find locations. She has had difficulties in which her speech is slow, pauses and is forgetful, may make mistakes right in the middle of sentences and get things mixed up. She has difficulties in talking to people, can be impulsive or inappropriate, or repeats herself when speaking. She makes impolitic statements. She has difficulties with sexual function now and is essentially celibate. She has a severe difficulty with sleeping and even sleeping medications, are only partially

effective. With respect to the activity of daily livings she has difficulty with social and recreational activities. Her daily life has become largely inert.

COLLATERAL INTERVIEW AND SOURCES

I was given to review depositions of her supervisors at her last two banking jobs, Jerry Jones at Mesa Bank and Maureen Lueck at Mountain West Bank, both of which I found significant in my diagnostic impressions. Both depositions were adversarial depositions, done by the Defense in the pending lawsuit.

Mesa Bank Manager Deposition

Mr. Jones' deposition was particularly important as he was Ms. Brown's supervisor both before and after the accident. Mr. Jones was the Vice President/Branch Manager of this bank. Mr. Jones described her prior to the subject accident as professional, well groomed, hard working, pleasant with customers and someone who got along with co-workers, if preferring to stay a bit above the fray of office politics. He said that she was an absolute perfectionist and that her desk never had a single item out of place. **The only unusual thing he noted in her personality was that she didn't like anybody touching anything on her desk, or using her computer for anything.** He explained that his bank recruited her to come to Mesa Bank from a competitor bank. He stated that he had known her since she had started at Mesa Bank as a receptionist, when they were both in their twenties. He had continued to follow her career as a colleague in the local banking community and saw an opportunity to bring her back to Mesa Bank as she seemed underemployed when she returned to Mountain West Bank. He stated that she had returned to his bank at a base salary of $50,000 three years previous to her accident and had gotten steady raises and generous bonuses up through the time of the accident.

Mr. Jones was further well aware of the anxiety problems that Ms. Brown had had in the fall of 2007 and had approved her medical leave at that time. He explained that the Bank had just been acquired by a larger national bank (US Bank) and many of the management people had been stressed and uneasy. **He acknowledged that Ms. Brown had not reacted as well as some to the increased stress and noted that she had called in sick several days in the week or two before requesting the leave**. He stated that she had never missed a single day of work prior to this period.

He said that she was such an excellent mortgage processor that he had no difficulty holding her job, even when her leave had been extended twice. He unequivocally stated that upon her return in December of 2007, she had returned to being the outstanding banker he had worked with for years previously. He noted no incidents with her emotions or stress levels after this return and had approved a $10,000 annual bonus for her at year-end and a merit raise in January.

In contrast, Mr. Jones testified that she was a radically different person when she returned to work three weeks post-accident. She seemed confused, agitated, overwhelmed, and unable to keep up with the flow of meetings or work. While she seemed better when the

conversation was limited to two people, as soon as a third party or distractions were added to the equation, she would start to have difficulties maintaining concentration or remembering what had been said or agreed to. She seemed incapable of making decisions, had no follow through on files and was even starting to show difficulty in interacting with customers. As he knew she was recovering from an injury, he had taken some extra time to stay on top of her files and found numerous mistakes. He agreed that she was free to work after hours to try to catch up but found that each day, she seemed to get further and further behind.

He stated that he had several times in the last couple of weeks she worked there asked her is she was feeling alright, sleeping OK and the like. He even suggested that maybe she needed to go back to the doctor, at least for something to help with her stress or sleep. He stated that when she called to tell him that Dr. Lisle had given her an indefinite medical leave, he was quite relieved as he was concerned that he might have to fire her otherwise. He stated that unless he was satisfied that she had returned to the functioning she had had in the spring of 2008, he would not be able to reemploy her, as much as he would like to have someone like her in his bank. He said that he doubted that was ever going to happen as he had seen Ms. Brown in the bank several times in the past few months as she continued to have her accounts there. He felt that while she was less stressed, she didn't seem to be doing much better in terms of managing her life. He noted that she had asked for his help on three different occasions with her checking account and that she had missed several payments on her home mortgage, which had required a restructuring of the loan.

Ex-Boyfriend Deposition

Also reviewed was the deposition of Thomas Gifford, who was the ex-boyfriend of Ms. Brown, which breakup had started her counseling with counselor Cliff, discussed above. There was nothing contained therein that would change the pre-morbid picture of Ms. Brown as described in the two work supervisor depositions. He described Ms. Brown as attractive, friendly, hard working, a bit obsessed about neatness and punctuality. He said she was depressed and unhappy just before the breakup and he knew, very depressed afterwards. He said he felt guilty about breaking up but that he didn't know what other options had existed as their relationship just didn't work towards the end. He testified that he never knew Ms. Brown to miss a day of work in the four years they were together. He said that the more troubles they had, the longer hours she seemed to work. He has not seen her since her accident and hadn't even known about it until hearing rumors after the commencement of the lawsuit.

Emily Brown, Sister of Patient – Collateral Interview

I also personally interviewed Emily Brown, Ms. Brown's sister. Emily states the patient has profound difficulties with being absent minded, profound difficulties with being forgetful and indecisive; all of these being more than once per day. Emily gave several

examples for these difficulties. She also described severe chronic anxiety, **perplexity, and disorganization.** According to Emily, her sister has significant difficulty with being more stubborn and rigid, and much more difficulty with planning than before, and more difficulty with judgment and risk taking. She has profound difficulty with being more impulsive. She has a more depressed affect and little insight, especially with her interactions with other people. Emily described her as being extremely **"self centered"** even though she wouldn't call her "selfish."

NEUROLOGICAL EXAMINATION

Her strength, reflexes, and sensation were normal. Basic cranial nerve examination was normal to bedside routine examination. She was unable to identify the smell of peanut butter with her left nostril, but got it correct with her right. Further smell test revealed 1 out of 3 correct on the Quick Smell Test. The banana smell she felt was cinnamon, the smoke smell she felt was incense. The smell difficulties would correlate to damage to the lower part of the frontal lobes, adjacent to where Cranial Nerve I, the olfactory nerve, enters the brain.

OPINIONS TO A REASONABLE DEGREE OF PROBABILITY

I have been asked to opine on a number of specific issues - to a "reasonable degree of medical probability." All opinions herein are to such degree of probability.

DIAGNOSIS:

1. Closed head injury. Traditionally, this would be considered a complicated mild brain injury in severity based upon a documented five minute loss of consciousness and a documented subarchnoid hemorrage. My diagnosis would shift that diagnosis to a moderate brain injury based upon the length and severity of the retrograde and post-traumatic amnesia, the abnormal CT scan on the date of the accident and the documented damage on the 3T MRI. The Moderate TBI has these complicating features:

    a. Manifest Orbital Frontal Injury to the lower part of her frontal lobes, based upon the dynamic change in the patient's function before and after the accident, and correlating with the loss of smell and the MRI scans.

    b. Diffuse Axonal Injury, including damage to the Corpus Callosum.

    c. Limbic System damage, including damage to the fiber tract of the uncinate fasciculous.

2. Severe Aggravation of a Pre-existing Anxiety and personality disorder.

DISCUSSION

The above diagnosis is supported by abnormal MRI scans from Nevada Imaging centers, the significant personality and vocational change in the patient and the clinical history as reported herein.

Moderate TBI. Only if the loss of consciousness had actually been videotaped would there likely be any better documentation of such than the 911 tape reviewed. In such tape, the caller essentially gave to the 911 operator a play by play account of the patient's lack of consciousness until clearly describing her process of waking up. A concussive injury to the brain with such documentation of LOC would meet any modern definition of "brain injury" or "brain damage." While the 5 minute period before waking up would classify this as a "mild traumatic brain injury" the presence of amnesia for events both before and after the accident would make this at a minimum, a "complicated mild TBI." However, in terms of predicting the outcome from a brain injury, the length of amnesia is known to be a far better guide than the length of LOC, and on this point her amnesia would put this clearly into the moderate to severe TBI category.

TABLE 7.1 Estimates of Severity of Injury Based on Posttraumatic Amnesia (PTA) Duration

PTA Duration	*Severity*
<5 minutes	Very mild
5–60 minutes	Mild
1–24 hours	Moderate
1–7 days	Severe
1–4 weeks	Very severe
More than 4 weeks	Extremely severe

According to Bigler (1990) and Lezak, Neuropsychological Assessment (2004) PTA of 1-7 days predicts a severe functional outcome and more than one week, very severe. See chart. While the contemporaneous documentation of amnesia after she leaves the ER on the day of the accident is less than optimal, she had a minimum of several hours of amnesia, if one finds her statements of not remembering the hospital credible. I do so find, based upon my clinical interview and the contemporaneous documentation of retrograde amnesia. Not remembering her first visits with Dr. Price or wearing a neck brace, would prognosticate a potentially severe injury. While I will not go so far as to label this injury a severe brain injury without more documentation of amnesia from Dr. Price, I am confident in a diagnosis of moderate brain injury, at a minimum.

Nature of the Brain Damage. I believe that Ms. Brown suffered several and distinct injuries to her brain.

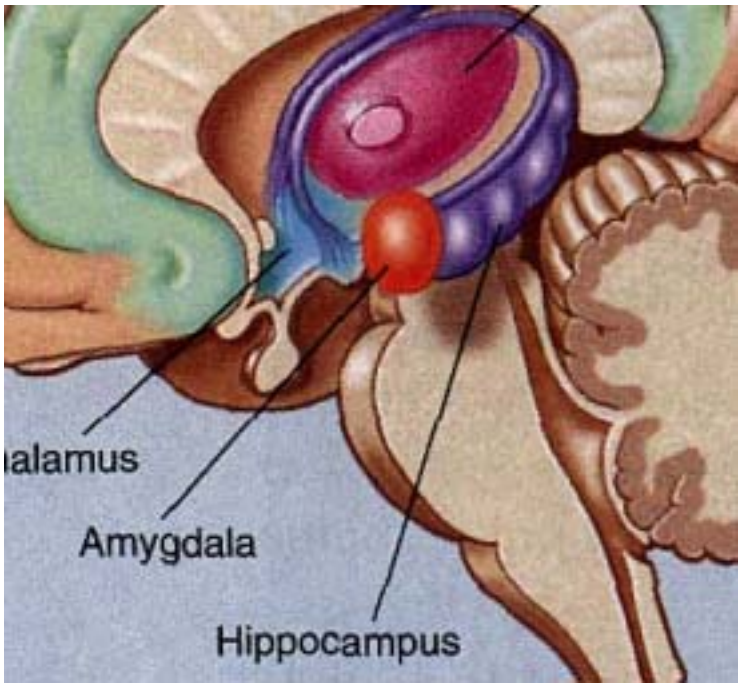
A. Orbital Frontal Injury. First, I believe that she injured the orbital frontal portion of her brain. This finding is supported by the abnormal MRI showing lesions in the frontal lobes, by her abnormal smell testing and by the dramatic change in her neuro-behavior before and after the accident. Most significant is the dramatic loss of initiative, organization, empathy, behavior modulation and other neuro-behavioral issues. This injury occurs in a significant proportion of brain injury cases because of the vulnerability of this part of the brain, in its close proximity to the bony ridges of the underside of the skull. Injury to this part of the brain is predicted any time the brain is jostled with significant force. The accident in question, clearly involved such force as to have the potential to injure the brain, and we know that it did because of the loss of consciousness observed. While a LOC is not necessary for an orbital frontal injury, it is highly probable in any injury that involves sufficient force to cause an LOC.

B. Axonal Injury to the Corpus Callosum. Second, I believe that Ms. Brown suffered a diffuse axonal injury in this accident. An axonal injury is an injury to the brain's connective tissue of the brain's electrical circuitry. The axon is the long protruding part of a neuron that extends a significant distance from the neuron's center. Axons transmit the neurons signal from one neuron to another, from one part of the brain to another and from the brain to all parts of the body. An injury to the axons in any one part of the brain will dynamically effect that part of the brain's ability to communicate with other parts of the brain and will show up most significantly in functional changes in processing speed and attention and concentration. Diffuse axonal injury, (DAI) meaning axonal injury that is not just concentrated in any one part of the brain, will also cause rapid fatigue in a patient, from the demands of over-attending. Over-attending describes a mental process requiring intense concentration because of the inefficiency in normal attending.

My diagnosis of DAI is also supported by the abnormal MRI of Dr. Orrison and particularly by the abnormal DTI imaging, which shows significant reduction in the fiber tracts of the corpus callosum. The corpus callosum is the concentration of axons (which in combination make fiber tracts) connecting the two hemispheres of the brain. Ms. Brown's neuropsychological testing and her functional difficulties maintaining concentration, focus and memory in the workplace, further corroborate damage to the axonal tracts of the corpus callosum.

C. Damage to the Limbic System Structures and Connective Axonal Tracts of the Uncinate Fasciculus. The most complex aspect of Ms. Brown's diagnosis relates to the complete change in character of her anxiety disorder post injury. While one could postulate that this involves only a preexisting injury, it is my reasoned opinion that Ms. Brown suffered a discrete additional injury to the part of her brain which regulates anxiety and memory, the Limbic System. Just as the corpus callosam is the collection of axonal fibers that connect the two hemispheres of the brain, the **uncinate fasciculous** is the collection of axonal fiber tracts that

connect the principal memory and anxiety centers of the brain to the frontal lobes (the thinking and maturity parts of our brain.)



Hippocampus. The brain's save button is the hippocampus. The hippocampus is the part of the brain most important to converting immediate memory to long term memory.

Amygdala. The brain's anxiety center is the amygdala. It is the amygdala that protected us from predators in the pre-historic times, that triggers our startle reflex in modern times and is the principal culprit in anxiety disorders.

Frontal Lobes. The frontal lobes are where we learn to become adults, where all activity is initiated, decisions made, emotions modulated and judgment's made. The orbital frontal part of the frontal lobe, on the underside, (just above where the word thalamus is cropped in the above diagram) is essentially the conductor of the brain's symphony, the part that tells the other instruments when to start and stop playing. The frontal lobes coordinate all activity.

Uncinate Fasciculous. Connecting the above critical structures is the uncinate fasciculous, the axonal tracts that run from one end of the lower brain structures to the underside of the frontal lobes.

Based upon verifiable damage to other axonal pathways, the material change in her memory, her personality and anxiety levels, it is my opinion that the uncinate fasciculous pathway was also damaged in this accident.

D. Profound Aggravation of her Anxiety Disorder. In a person with an anxiety disorder, the amygdala is already overreacting to potential anxious moments. It runs "hot" so to speak. When, post a significant brain injury, as in the present case, when additional damage occurs to the hippocampus, frontal lobes and the uncinate fasciculous, the information that gets moved across this lower brain circuit gets garbled. When information between the limbic system and the frontal lobes gets garbled, anxiety can become panic, depression can become organic rather than just reactive and the person's ability to modulate emotions and make decisions, seriously impaired. The combination of pathologies in these areas, coupled with inefficient communication between them creates a synergistic pathology far more functionally impairing than any one of those impairments might have been alone.

That is precisely what is happening in Ms. Brown's situation. When you add situational stress to the mix of challenges her brain now deals with, she is virtually assured of a "crash", just like a computer might crash when the processing demands exceed the RAM and CPU available to it. While pre-morbidly her amygdala probably ran a little hot at times, she had no impairment in the other associated areas. Her memory was excellent, her capacity to multi-task exceptional, and despite her mild personality challenges, her people skills excellent, regardless of how much internal stress she might have felt in any situation.

Now, any time the stress threshold is turned up, her brain just doesn't function in any productive way. Her thoughts will literally "chase their tails" and the more she concentrates on a specific challenge, the further she will be from resolving it.

While in a quiet environment, with no time constraints, where stress could be completely eliminated, she can undoubtedly still do the work of someone with a 120 IQ,. That "potential ability" has no practical application to real world challenges. What is clear - but perhaps not obvious - is that just normal social conversation task her attentional demands in such a way to create a risk of a "crash". One on one, she can keep up. But as soon as she is expected to engage in a conversation with more than one other person, she starts to fall behind. Picture a court reporter when two people are talking. Like the court reporter who instantly gets behind, as soon as there is multiple sensory input (in this case

hearing) she can't keep up. When her brain starts to get behind, memory becomes unreliable, emotions become more labile and interpersonal skills vanish.

The divided attention issues of a three way conversation are easy to demonstrate and explain. What is more complicated to explain is that any sensory or processing demand will make her brain start to lose the capacity to keep up with real time. One of the single biggest demands on the brain's attentional capacities is stress or other emotions. Highest on distraction curve is anxiety. Remember that we evolutionarily have this emotion to force us to flee a predator without evening making a conscious decision to run. No one is more vulnerable to a bad result from injury to the lower brain structures as discussed above, than someone who already has challenges with anxiety.

Give Ms. Brown a deadline, and she will invariably do worse. Add emotional distractions, anger, depression, pain, noise, criticism or any sensory stimuli, and she will malfunction. But when she can find the mental energy to focus on the task at hand, in face of any of the above, she will do so only by over-attending, which will fatigue her in a matter of minutes.

Summary of Diagnostic Impressions

It is thus my opinion, to a reasonable degree of medical probability that Ms. Brown suffered brain damage in this motor vehicle accident of the following types: Orbital Frontal Lobe, Diffuse Axonal Injury including to the Corpus Callosam and Limbic System damage, including the axonal tract injury to the Uncinate Fasciculous, hippocampus and amygdala. It is my further opinion that she suffered a dynamic aggravation to her pre-morbid anxiety disorder, as a result of organic injury to the structures and pathways that modulate anxiety. This aggravation of her pre-existing disorder was such to change the entire functional impact of this disorder from mild anxiety which can have some socially and vocationally useful manifestations, to a completely dysfunctional personality disorder. Worth noting is that it is entirely predictable that a person with her pre-morbid profile, suffering this type of organic injury, would have this type of bad result.

PERMANENCY

I have been asked whether I believe that the diagnostic opinions I have given and the limitations I have described above are permanent. It is my opinion that they are. While ongoing treatment, medications and counseling will improve the quality of Ms. Brown's life, that she has suffered structural brain damage will not change. Such damage is permanent. However, neurobehavioral changes post brain damage do evolve, sometimes for more positive outcomes – oftentimes for progressively more negative outcomes. Human behavior always evolves over time and Ms. Brown's brain will continue to evolve. That evolution can be positive, provided she gets optimal therapy, supportive services, cognitive stimulation, community integration and ongoing aggressive counseling and care. On the other hand, if Ms. Brown does not get the interventions and accommodations I have called for herein, her pathologies may in fact get worse, particularly her limbic system and anxiety issues as the brain does have the capacity to harm itself by running too hot in those areas.

ECONOMIC DAMAGES

Medical Bills. I have been asked to review the medical bills for Ms. Brown's treatment since the motor vehicle wreck of June 15, 2008, a list of which bills are attached. The total of such bills in $85,000, of which about $20,000 is for medication. Of the medication, about $4,000 of that is for continuation of the Celexa medication she had been taking prior to the accident, although in a currently higher dose. The balance of her bills are Emergency Room - roughly $5,000, follow-up neuroimaging - $10,000, neuropsychological reports - $10,000, psychiatric treatment and counseling bills - $20,000, brain injury rehabilitation - $20,000.

It is my opinion that all of the described medical bills were necessarily incurred for the treatment of the injuries suffered by Ms. Brown in this motor vehicle wreck, with one exception of a portion of her treatment for anxiety. I believe that she would likely have incurred approximately 50% of the cost of her Celexa, for her pre-existing anxiety disorder, yet only $2,000 of her psychiatric and counseling bills. I further believe that the amounts of such bills are reasonable for the services provided. Thus, it is my opinion that to date, Ms. Brown has incurred medical bills related to this accident in the amount of $81,000.

VOCATIONAL LIMITATIONS AND RESTRICTIONS

My starting point for a vocational analysis of someone with brain damage is the Social Securities Administration's (SSA) criteria for the "Mental Abilities Required for Employment." While there are aspects to neuro-cognitive and neuro-behavioral disability that are not detailed within that list, virtually anyone who has such additional challenges, will run afoul of the criterion on such list. The SSA mandates are below. I have

highlighted the areas where I believe Ms. Brown will have particular difficulties.

Mental Abilities Needed For Any Job:

POMS s. 25020.010B3:

2. Mental Abilities Needed For Any Job
a. Understanding, **carrying out,** and remembering simple instructions,
The ability to remember locations and work like procedures.
The ability to understand and remember very short and simple instructions.
The ability to carry out very short and simple instructions.
The ability to maintain concentration and attention for extended periods (the approximately 2-hour segments between arrival and first break, lunch, second break, and departure).
The ability to perform activities within a schedule, maintain regular attendance, and be punctual within customary tolerances.
The ability to sustain an ordinary routine without special supervision.
The ability to work in coordination with or proximity to others without being (unduly) distracted by them.
The ability to complete a normal workday and workweek without interruptions from psychologically based symptoms and to perform at a consistent pace without an unreasonable number and length of rest periods.

b. **Use of judgment**

The ability to make simple work-related decisions.
The ability to be aware of normal hazards and take appropriate precautions.

c. Responding appropriately to supervision, coworkers, and usual work situations

The ability to ask simple questions or request assistance.
The ability to accept instructions and respond appropriately to criticism from supervisors.
The ability to get along with coworkers or peers without (unduly) distracting them or exhibiting behavioral extremes.

d. Dealing with changes in a routine work setting; the ability to respond appropriately to changes in (a routine) work setting.

As noted above, I do believe that Ms. Brown is capable of remembering locations, procedures and to understand very short and simple instructions. She will have some difficulty in carrying out and following through on even these simple matters. However, where she will clearly have great difficulties are with the following:

- **Maintain concentration and attention for extended periods.** I would anticipate that her limits might be an hour or two the first morning of a given work week, and get progressively shorter in the afternoon of that day, and be progressively shorter each day thereafter.
- **Performing on Schedule.** I believe that Ms. Brown will have extreme difficulty, as explained above, any time pressures are placed upon her.
- **Maintaining attendance.** While I do not doubt that Ms. Brown will be highly punctual when she can make it to work, I believe her decompensation to stress will result in her missing at least one day a week of work, based upon her current track record. However, if she were to return to a free market employment job, such stress would dramatically increase such decompensation. Stress and impaired neurological and neurobehavioral function do not mix well.
- **Need for supervision/impact on co-workers.** If Ms. Brown were to be re-employed, I believe she will require extensive supportive vocational assistance, for years, perhaps permanently. She is extremely needy, requires continual prompting to do any activity, has difficulty making any decisions and obessess on even the smallest of challenges. I believe that these issues will make it very difficult for her to get along with co-workers and she will unnecessarily distract them from their duties.
- **Psychological Disruptions/Pace.** There is no chance that work place type stresses can be placed on Ms. Brown without regular and nearly pathological psychological disruptions. As stated above, the more time pressure she is put under, the more likely the disruptions.

Were it strictly a matter of economics, I would opine that work would be an uneconomic venture for her. But Ms. Brown was such a high achieving person premorbidly and her current intellectual functioning is at such a high, if flawed level, that if she does not engage in vocational activities or the equivalent, she will in all likely have a far worse outcome than she would be if she found some type of employment, regardless of how little such employment added to her overall financial picture. Thus, I believe it is appropriate to spend a significant portion of what she might make in the employment market, even beyond 100% of her income if necessary, to get her back to work. As accomodated work will provide the maximum amount of neurobehavioral recovery for her, it is important, even if it is a revenue neutral proposition.

In order to have a work experience that does not make matters worse instead of better for her, she will need the following accomodations/assistance:

She must do work where she gets the positive achievements that she had pre-injury. She must be able to feel a pride in what she accomplishes in the work place. For many reasons, including that only work where she has special abilities (such as her premorbid

experience and high retained IQ) are the necessary accomodations going to be economically justifiable.

She must while working in an intellectually stimulating environment, work in a low stimulation space. She really needs a quiet office to herself, with only limited interruptions.

She needs access to a daily job coach, not to just assist her with vocational challenges, but who will patiently absorb the emotional stresses that she cannot deflect to co-workers. If she is not given a mechanism to vent about her daily frustrations, insecurities and anxieties, she will inevitably cause a significant disruption to her co-workers, quickly resulting a job loss.

She will also need access to repeated job placement assistance, as it is inevitable that she will have job failures and meltdowns, that will result in job interruption. While if the right job comes along, she may thrive, it will take a unique opportunity for that to occur, so alternative placements have to be factored in.

Any employer will also have to accommodate her reliability issues, and not put her in an exposed situation where a simple memory or concentration mistake will not be caught by someone else. In general, even a 5% error rate will get most people fired. Just her errors of omission will likely exceed that on a good day. Thus, the job coach needs to work with the employer to adjust expectations, and find a safety net for her reliability.

I reviewed Dr. Gamboa's initial vocational opinions in this case and I agree that without those accomodations, she will have a total loss of earning capacity. Based upon her last year of earnings at Mesa Bank, I would agree that such totals $80,000 per year. I see nothing that would indicate that Ms. Brown would not have worked until normal retirement age of 67, so I agree that she is more probable than not, going to lose more than $2,000,000 of earning capacity as a result of the subject accident.

However, I have shared with Dr. Gamboa my opinions that work is essential, not for her ideal happiness, but perhaps for her very survival and have asked him to recalculate his findings, with the accomodations I have felt necessary. Based upon his estimation of first the cost of the job coach and the lower earnings capacity, his opinion that she might be able to achieve a net $25,000 of annual income (after deduction of the cost of the job coach) in her worklife seems reasonable. I also agree with him that it is likely that her worklife expectancy will be materially shortened, by as much as half, especially considering the time she may be forced out of the workforce, via terminations or medical leaves.

FUTURE MEDICAL NEEDS

Medications. Her current medications average about $10,000 a year, of which I have opined that $9,000 is accident related.

Rehabilitation. I have carefully considered as to whether Ms. Brown would benefit from an in-patient rehabilitation and it is my opinion that she would not. While there are some beneficial coping skills that would theoretically be gained by such a program, I don't believe that Ms. Brown would be open to such a program and thus get little long term value from it. She would likely have so much psychological disruption from being placed in such a facility that she would be completely negative towards most of the potential benefit. I do agree that a periodic return to an outpatient program would benefit her and believe that an average of $4,000 per year is reasonable for such expense.

Doctors and Counseling Visits. I believe that Ms. Brown should continue to see her counselor, increasing those visits to weekly. She has a long term relationship with this counselor and seems to benefit from those visits. It is my opinion that she will need a four fold increase in those counseling visits versus what she would have needed pre-morbidly and thus allocated $4,000 per year for such care. I also believe that the cost of her psychiatric care will increase an additional $1,000 per year because of the complexity of treating her currently poorly controlled neuro-behavioral issues, versus her pre-morbid, well controlled anxiety disorder.

Aide. I have carefully reviewed the report of the plaintiff's life care planner and his recommendations for what he refers to as a "navigator" A navigator, or a guide is in essence a human aide, who would assist Ms. Brown daily in dealing with life's activities, challenges and decisions. The recommendation was a variable one of either 4, 8 hours per day or 24 hours per day, with differential annual costs depending on which option.

I do agree that Ms. Brown's tendency to synergistically crash and burn from having to deal with any of life's challenges, would greatly be reduced by a navigator. While some of these tasks could certainly be done by a loved one, based upon Ms. Brown's current relationship status (none) and her psychological challenges, it is not reasonable to anticipate a loved one will always be there for her. Clearly, having someone there everyday to handle decisions, make sure she actually does something, concerns herself with grooming, and activities is important. Without that, she has already burdened all professionals currently treating herself, including myself and my office staff, to the point that she may ultimately not be able to get the preferred treatment from her current providers. Further, if her capacity to negatively dwell on each and every negative thought is not negated, she may in fact do further organic and psychological damage to her brain.

In terms of the hours of day required for such aide, I believe that because I have called for an ongoing job coach, that the additional amount of time for such "navigator" could be reduced to two hours per day. Ideally, the same person might be able to play both roles. While there is certainly some risk of emotional decompensation, judgment errors and late night crisis, I think two hours of positive activity and assistance a day will reduce the risk of that occurring. More than two hours a day would likely intrude into Ms. Brown's world in a way she would find uncomfortable and give her even less feeling of self worth.

I further believe that this individual must be a professionally trained individual. The chances of Ms. Brown being able to independently employ such a person is very poor and exposes Ms. Brown to undesirable and poorly trained individuals. That an agency must be used for this service is also probable because it is likely that there will be a high turnover in such job because of Ms. Brown's interpersonal difficulties.

The cost of 2 hour per day would be an annualized cost of $15,000.

In summary, it is my opinion that Ms. Brown will need the following annualized costs for future care:

Medicines	$ 9,000
Occupational Therapy	$ 4,000
Doctor and Counseling Visits	$ 5,000
Life Coach	$15,000
Total	$33,000

Ms. Brown's current life expectancy is just over 40 years, so her lifetime cost would be roughly $1,250,000.

The foregoing report addresses all of my opinions in this matter.

Sincerely,

Gordon Johnson, M.D.[2]

[2] This is a fictional report. Gordon Johnson is not an M.D. but an attorney, from Sheboygan, Wisconsin, who is the Chair of the Traumatic Brain Injury Litigation Group.