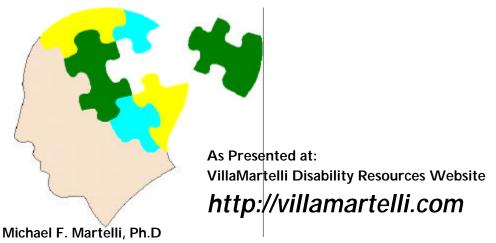
Retraining Habits after Brain Injury:

The Habit Retraining Model of Neurorehabilitation for Incremental Re-Scaffolding of Life



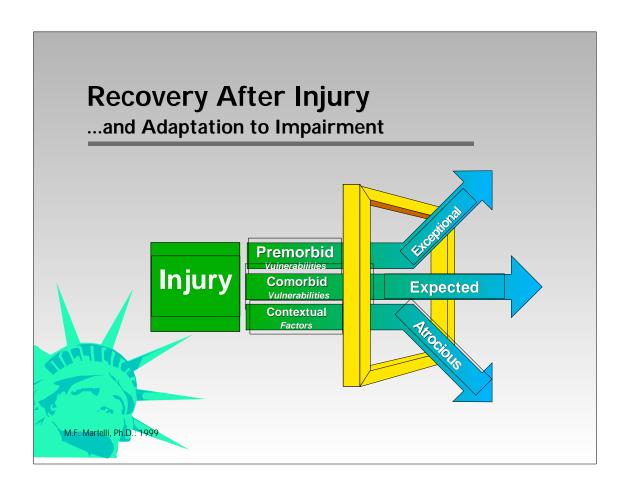
Concussion Care Centre of Virginia, Pinnacle Rehabilitation and Tree of Life 10120 West Broad Street, Suites G - I Glen Allen (Richmond), Virginia 23060

REHABILITATION

The Systematic Process of:



- ▼ Removing Obstacles to Independence
- ✓ Accessing Opportunities for Stepwise Achievements (Of Desired Goals) in the areas of Love, Work and Play!
- Changing Destiny!



Habit Retraining Model for ABI:

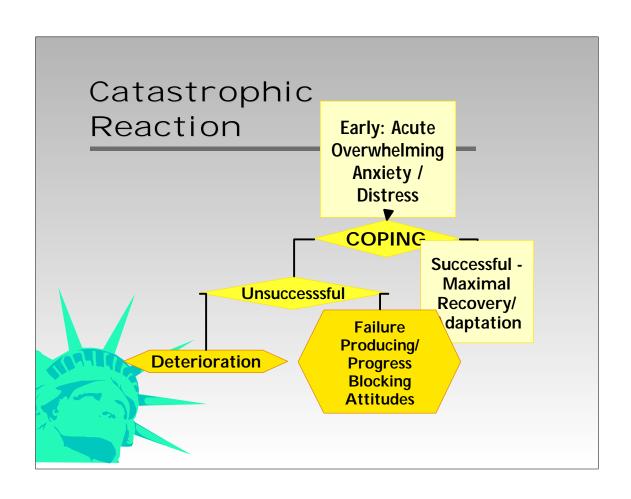
- While animal behavior is largely instinctually controlled, human behavior is largely learned. From the time of birth, almost everything that humans do is learned.
- Importantly, human beings are the greatest learning organisms ever to roam the earth. Anything repeated becomes habitualized.
- Maturation and socialization are learning processes wherein human behavior becomes increasingly complex through acquisition of simple habits which are hierarchically compounded to produce complex behavioral sequences.
- The complex behaviors that make up the average humans everyday behaviors are performed efficiently and automatically because of a hierarchy of habits. Through converting repeated behaviors into habits, complex behaviors are performed automatically, freeing up concentration, energy and effort for other tasks.

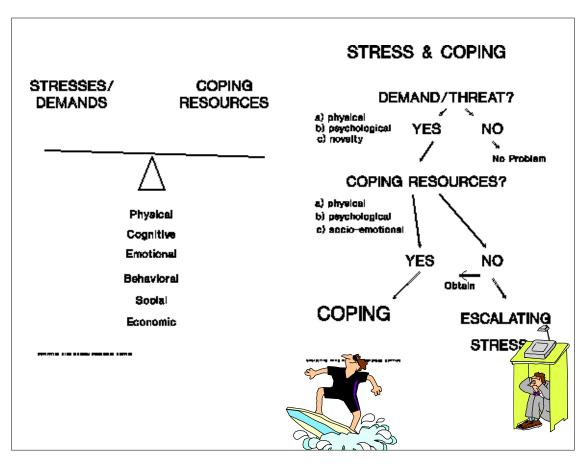
Habit Retraining Model for ABI: (continued)

- If some of even the most basic habits are weakened or erased, everyday abilities and routines can be seriously disrupted and efficiency lost. What was once automatic and effortless can require the same effort it took before efficient ways of performing any of the components of daily activities were learned.
- Even if important behavioral habis are lost, and the brain cells which sustain them destroyed or altered by injury or illness, the ability to relearn is seldom destroyed. Newl learned habits can be developed as replacements.
- We know the prerequisites for learning / relearning:

Habit Retraining Model for ABI: (continued)

- The greatest obstacle to learning or relearning is the redirection of energy away from goal directed activity and toward debilitating emotion and activity.
- Most frequent Rehab Energy Reserve poisons (Re-Learning Blocks) include:
 - Fear / Anxiety, Depression, Anger and Resentment, Feelings of Victimization, and inertia
- Rehabilitation Requires Removal of Blocks





REHABILITATION Ingredients: The 3 P's



outcome. Most plans are based on task analyses, or breaking seemingly complex tasks down into simple component steps, and proceeding in a list wise fashion. Clearly, the more specific, concrete, and obvious, the more likely the plan will work.



Practice: Repetition is the cement for learning which makes complex and cumbersome and boring tasks more automatic and effortless. With practice and repetition, even complex tasks become automatic and habitual. That is, a habit, or automatic robots, performs the tasks for us without special effort, energy, concentration, memory, and so on.



Promoting Attitude: A

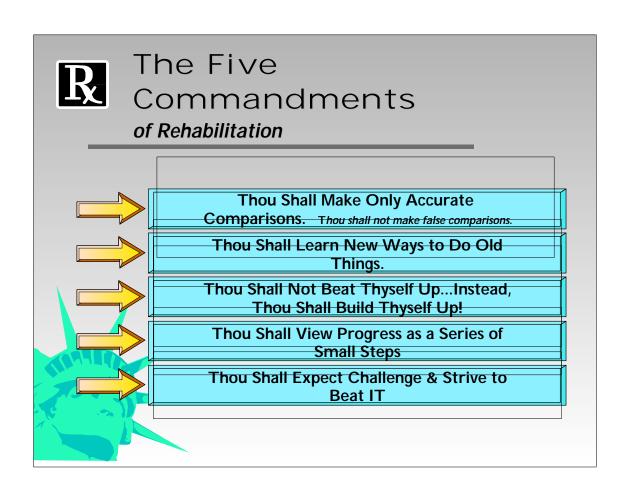
facilitative attitude provides the motivation that fuels persistence & mobilization of energy necessary for accomplishment of a progressive series of desirable but challenging goals.

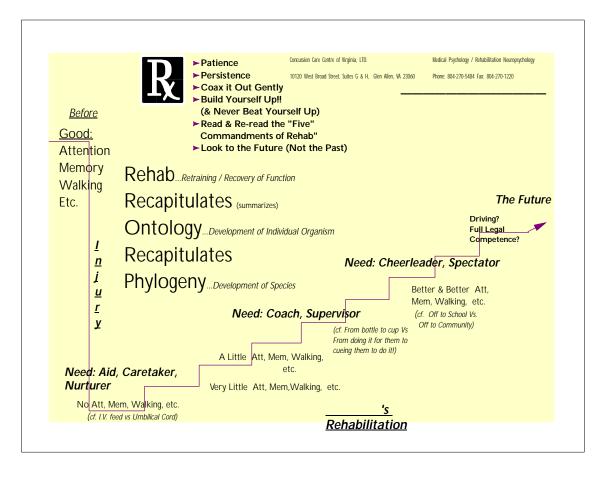
Concussion Care Centre of Virginia, LTD.

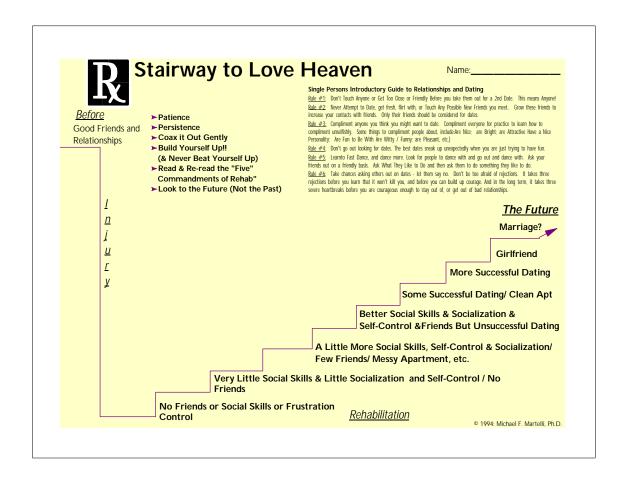
Rehabilitation Imperative #1



- √ First <u>Want</u> to Improve
- ✓ Second <u>Believe</u> that You Can Improve
- ✓ Third <u>Set</u> a Series of <u>Gradual, Incremental</u> <u>Goals</u> so that You Can Improve in small steps!





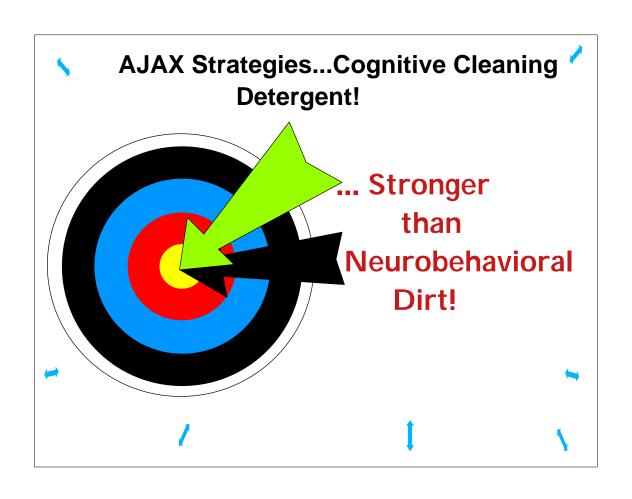


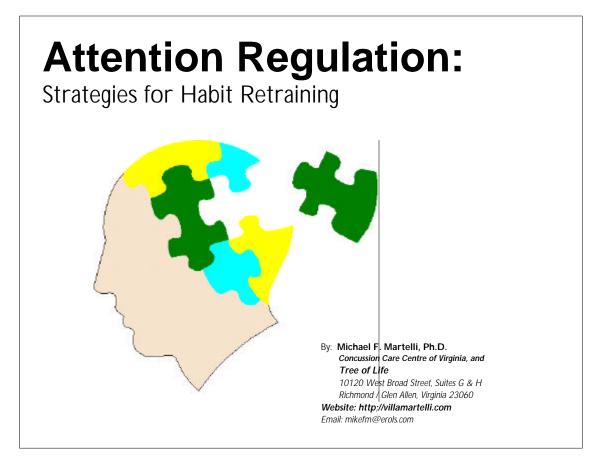


Task Analysis: The basic LEARNing strategy



- TA: Breaking a task into single, logically sequenced steps & recording in a Checklist and then checking off each step as it is completed.
- TA's always make task initiation, completion & follow through much easier....greatly improveperformance despite limitations in memory, attention, energy, initiative, ability to sustain performance, organization...any other difficulty.
- TA's reduce demand and energy consumed by reasoning and problem solving associated with planning, organizing & having to recall, make decisions & prioritize appropriate steps and sequences for both basic and complex tasks.
- TA's (re)establish efficient habit routines that make up normal everyday activity. 30 to 1000 consistent repetitions produce automatic habits
- Ingredients for (re)building automatic habits are the 3 P's: Plan, Practice, Promoting Attitude. The result is (re)habilitation, or increased efficiency accomplished by removing obstacles to independence.







Concussion Care Centre of Virgini

ATTENTION REGULATION STRATEGY

Auditory Comprehension & Memory

- **→** TO REALLY CONCENTRATE, I MUST LOOK AT THE PERSON SPEAKING TO ME
- ✓ I Must Also Necessarily FOCUS ON WHAT IS BEING SAID, NOT ON Sorrounding Sounds or Activities or OTHER THOUGHTS WHICH WANT TO INTRUDE
- → ALTHOUGH IT IS NOT HORRIBLE IF I LOSE TRACK OF CONVERSATION, I MUST TELL THE PERSON TO REPEAT THE INFORMATION IF I HAVE NOT Fully ATTENDED TO IT
- ANY MOMENT BY REPEATING EACH WORD IN MY
 HEAD AS THE PERSON SPEAKS

Concussion Care Centre of Virginia

Modical& Robab Neuronsychology



ATTENTION REGULATION STRATEGY General Distraction Buster

- TO REALLY CONCENTRATE, I MUST LOOK/ FOCUS ON THE TASK AT HAND
- ✓I Must Also FOCUS ONLY On WHAT IS BEING Done, NOT ON Surrounding Sounds, Sights or Activity, or OTHER Stresses of THOUGHTS WHICH WANT to Intrude
- ► I I MUST CONCENTRATE ON WHAT I AM DOING AT EVERY MOMENT BY FOCUSING ON THE CURRENT STEP TOWARDS TASK COMPLETION
- IT IS NOT HORRIBLE IF I LOSE My FOCUS or CONCENTRATION. I will simply have to Repeat and Re-Focus ON THE ONGOING TASK AT HAND, THE NECESSARY STEPS TO COMPLETE IT, AND THE NEXT STEP TO WORK ON!



ATTENTION REGULATION STRATEGY Lecture Distraction Buster

- **▼** To REALLY CONCENTRATE, I Must LOOK / FOCUS on the PERSON LECTURING
- ✓I WIII ALSO FOCUS ONLY On WHAT IS BEING SAID, NOT ON Surrounding Sights, Sounds or Activities, or Other Thoughts Which Want to Intrude
- ► I MUST CONCENTRATE ON WHAT I AM HEARING AT EVERY MOMENT BY FOCUSING ON THE CURRENT WORD & PHRASE AS I HEAR IT
- IT IS NOT HORRIBLE IF I LOSE My FOCUS or CONCENTRATION. I will simply have to Re-Focus ON THE CURRENT WORD, PHRASE and MEANING, To Get Back on Track!

Concussion Care Centre of Virginia

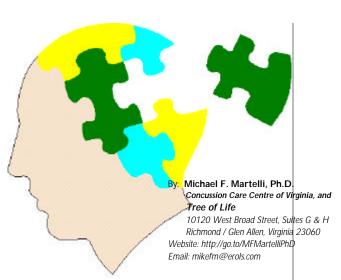
Modicals, Robab Neuropsychology

ATTENTION REGULATION STRATEGYDriving Distraction Buster *

- **►** TO REALLY CONCENTRATE, I Must LOOK / FOCUS on the ROAD, My Vehicle & Other Vehicles
- I Will Also FOCUS ONLY On WHERE My CAR IS, WHERE OTHER VEHICLES & PEOPLE ARE and WHAT I AM DOING With My CAR And NOT On Surrounding Sounds, Sights, People or Activity or Other Thoughts Which Might Want to Intrude
- I MUST CONCENTRATE ON WHAT I AM DOING AT EVERY MOMENT BY FOCUSING ON WHAT I AM DOING AND TALKING MYSELF THROUGH IT
- ✓ IT IS NOT HORRIBLE IF I LOSE My FOCUS or CONCENTRATION. I will simply have to Immediately Re-Focus ON WHERE and WHAT I am DOING!

* and Reading, Multiple Attention, etc.

Comprehension and Organization: Strategies for Habit Retraining







Organization Strategy: Comprehension #2



- **Survey** (Preview Content Areas)
- **▼ Question** (Formulate Questions)
- **▼ Read** (& Answer your Questions)
- **▼ Recite** (Main Points)
- Review (and Rehearse)



The Organization Imperative

Bottom Line

- Short, succinct, to the point...
- **■** ...MAIN POINT...BOTTOM LINE!
- ...Give OUTLINE of BOTTOM LINE BEFORE elaborating DETAILS

🗹 One Thing at a Time

- **▼** STAY FOCUSED on One Thing at a Time & INHIBIT WANDERING
- Monitor Ongoing Activities & Conversations & Demonstrate Ability to TRACK
- Use Multi-Tasking Monitor to Keep Track of other Things



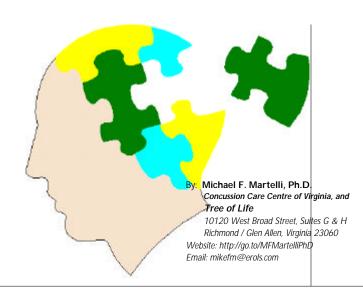
Multi - Task Monitor / Trainer

TO DO List	6.
1.	7.
2.	8.
3.	9.
4	10.
5.	Transfer incompletes to next day

Task 1: Left Off: Le	Multi-Tasking Monitor	Multi-Tasking Monitor
Task 2: Left Off: Left Off: Task 3:	Task 1:	
Left Off: Left Off: Task 3:	Left Off:	Left Off:
Task 3:	Task 2:	
	Left Off:	Left Off:
1 0 00	Task 3:	
Left Off: Left Off:	Left Off:	Left Off:
Task 4:	Task 4:	

MEMORY:

Strategies for Habit Retraining





Strategies For Remembering Names

■ Repeat the Name 5 Times

Repeat to yourself and out loud in sentences - "So your name is _____, I like the name _____", etc.

Make Associations

Between Name & Physical Features - e.g. Mike& mustache

- Write Down the Name
 WriteName and Description (in your head and/or Logboook)
- Review Your Memory Immediately

Afterwards

- Replay Introduction in Memory and Rrepeat Five Times
- Use a Tape Recorder as a memory fail safe aid



Strategies To Prevent Losing Things

- Always Review What You Have in Your Possession & Where You are Going With It & Where You Will Place it Beforehand ... Where are you going & how will you get there & What Do You Have With You and What Are You Going to Do/ Where Will You Put It
- Picture Where You Are Going and What You are Taking With You

...See every landmark, item, room, building, etc.

- When You Begin the Activity, Talk to Yourself to Monitor Where You are
 - Going, Where You Place What, etc.



Strategies To Keep Track of Tasks & Activities

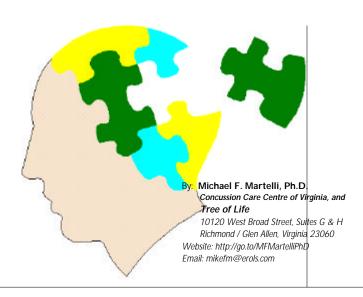
- Always Review What You Have in Your Possession & Where You are Going With It & Where You Will Place it Beforehand ... Where are you going & how will you get there & What Do You Have With You and What Are You Going to Do/ Where Will You Put It
- Picture Where You Are Going and What You are Taking With You ...See every landmark, item, room, building, etc.
- When You Begin the Activity, Talk to Yourself to Monitor Where You are Going, Where You Place What, etc.

Strategies To Prevent Driving Lapses

- Review the Travel Route In Your Mind Before Beginning the Trip
 ...Where are you going & how do you get there? (Include every landmark, exit, turnoff, etc.)
- Picture The Travel Plan and Picture Yourself Driving the Route ... See every landmark, exit, turn off, etc.
- When You Begin the Trip, Talk to Yourself to Monitor Travel Route, Turns, etc
- Consider Making a Map of the Travel Route, Placing it on the Carseat,
 Marking the Major Exits, Turnoffs, etc. & Following & Checking It
 While Driving

NeuroBehavioral Regulation:

Strategies for Habit Retraining



Concussion Care Centre of Virginia



RED FLAGS After Temporolimbic Brain Injury

- ▼ F Fatigue...Increased susceptibility to fatigue means you will tire faster (and probably not recognize it) and be more susceptible to increased Emotion, sensitivity to overStimulation, and be more likely to have reduced Temperature tolerance!
- E Emotion...Your emotions may be more intense, especially once relating to anger or insecurities, and they will be most magnified when you are tired, hot, and/or overstimulated!
- S Stimulation... Your sensitivity to over- Stimulation will change and the likelihood of getting tired faster, or more emotional o irritable orr blowing up, will increase with Stimulation (noise, commotion, etc. especially noise, multiple persons talking)
- T Temperature... Your body's temperature regulation ability may change, and you may be more sensitive to heat or cold, with resultant increases in the other areas.

Controlling These is FESTive! ...Don't Let Them FESTer!

Also, Temporolimbic Brain Injuries Usually Produce Memory Problems

Coping With Sensory Information Processing Disturbances

- General Goals
 - ► Psychoeducation re: sensory processing, disorders, etc.
 - ►Increasing comfort with disorted sensory information processing
 - Sensory information distortion (i.e., auditory; vestibular/balance disorder; visual; etc.)
 - Body Self Image Distortion (body-self neuromatrix abnormalities)
 - Increasing utilization of effective compensatory coping strategies to minimize: A) Sensory information distortion;
 - B) Body Self Image Distortion
 - Setting Incremental Expectancies for stepwise goal directed progress in above areas: Graduated Exposure
 Sensory Retraining

Graduated Exposure Sensory Retraining

PURPOSE: Exposure to situations which produce distressful physiological/ sensory (& Emotional) reactions in a Gradual Manner allowing incremental increases in tolerance (& incremental compensatory learning & incremental extinction of anxiety and/or sensory interpretation difficulty) without experiencing significant

compensatory learning & incremental extinction of anxiety and/or sensory interpretation difficulty) without experiencing significant anxiety or sensory distress. Examples of sequelae of traumatic brain injury & neurologic impairment include anxieties, phobias & distressful sensory & emotional reactions to:

- ► Noise and/or light (when not mediated by vascular headaches or other physiologic processes)
- Crowds and public places (e.g., stores, malls, sporting events)
- Overwhelming visual stimulation and patterns
- Driving (especially in traffic) General Goals

Concussion Care Centre of Virginia Medical / Rehabilitation Neuropsychology * cf.: Vestibular Overload



Rehab N Pacing Imperative *

Neurogenic Fatigue

- ➤ Remember to Leave Enough Reserve Energy For Brain Recovery, Strengthening & Building of Resilience/Increased Capacity in Brain Cells....
-If You Go as far as Tolerance or Energy Will Let You (i.e., until fatigued and/or sick), you will Not Allow Continued Recovery and Brain Strengthening (...instead, energy will go toward recovery from sickness, which only returns you to where you were...without progressing!)

Pace it...Don't Race it!

Progress is a series of small Steps...Celebrate each one patiently!

© M.F. Martelli, Ph.D: 1994;1996



Self-Regulator for Involuntary Sadness!

- 1-Re-<u>Label</u>...It's Not an Intended, or Legitimate Degree of Emotion...It's Involuntary Sadness!
- 2-Re-Interpret...It's just Involuntary and Unintentional Sadness in which nerves connecting the brain's emotional experience centers to emotional expression muscles are weakened resulting in decreased control & exaggerated release of emotion!
- **3-Re-**Focus...Concentrate on something different, or pleasurable or funny, to distract myself and & restore control of expression ("Plop, Plop, Fizz, Fizz...."!)
- 4-Re-<u>E</u>valuate...Decide that the involuntary sadness or teariness is Illegitimate and False Information. Decide to Dismiss This Information and Restore Control through re-focusing attention! Re-LIFE it!



Concussion Care Centre of Virginia Medical & Rehab Neuropsychology Service

Management of Emotional Reactions: Temporal Lobe Epilepsy (TLE)

To increase control of emotions and improve problem solving and general stress management and coping, we have developed a 4 step self-control procedure called Re-L.I.F.E..

The general outline for the Re-L.I.F.E. procedure is as follows:

Re:

- 1. L-Label: re-label the feelings as illegitimate, hyper-intensified emotions
- I Interpret: re- interpret them as emotional amplifications or hyperintensifications caused by electricity (i.e., kindling or hyperconnectivity) or B.S. (Between Seizure electrical amplification)
- F- Focus: re-focus on anything less distressing, more pleasant, different, in order to disrupt the developing escalation of electricity and intensified emotions
- 4. E Evaluate: re-evaluate the theme of electricity intensifying emotion as a component of epilepsy, as requiring that the primary red flags be monitored, and, when identified, re-interpreted more accurately, so that they can be controlled.

When this "self-talk" self-control procedure is used before the amplification of emotions progresses too far, it can counter amplification, preventing the escalation of emotions that leads to: psychic changes and increased emotional distress; increased fatigue and possible eventual exhaustion; and increased probability of eventual seizures - and a recurring pattern of poor emotional and/or seizure control.

Notably, posters, and graphic representations, with personalized details, are typically employed to assist with learning and application of this self-control intervention.

cf. Psychophysiologic Aura/Red Flag Discrimination / Self Control Habit Procedure

Mission Impossible

Assignment

Your Mission, should you decide to accept it:

- Look for Opportunities to Build Stability By Practicing Emotional De-escalation / Self-Control Strategies
 - ► Practice Both:
 - (A) Preventing Temporal Lobe Based Emotional Hyper-intensication (i.e., use Emotional Well-Being Habit to prevent "kindling" of electro-emotion)
 - (B) De-escalating "kindled" Emotion via Re-Interpreting it as electrical buildup trying to replicate itself by using your emotions against you to fuel more electricity!

 Freedom is Worth The Effort!

Concussion Care Centre of VAs Medical Psychology Service

HOMEWORK

EMOTION CONTROL HEADQUARTERS



- Look for Opportunities to Think Suspsicious Thoughts, Think Someone is Screwing You, and Get Angry, and then:
 - ► Practice re-interpreting them in a harmless, non-threatening, non-angering way!
 - ► Practice Saying "So What", "Who Cares" and "Who Says"
 - ► And, Remember the Stress Buster Rules:
 - Rule#1: Don't Sweat the Little Shit!
 - Rule#2: It's All Little Shit!

(it's just that your injury makes it seem bigger than it really is!)

Concussion Care Centre of VAs Medical Psychology Service

Chris's Mission Impossible



HOMEWORK

Your Mission, Should you decide to accept it:

- Look for Opportunities to Feel Urgency Or Need for Immediate Fulfillment and Convert it to Strategic Under-Reaction
 - ► Practice Countering Urgency via the Stress Buster Rules
 - ► Practice Building up Tolerance to Need/ Stress Frustration (i.e., Become *More Stress Resistant*, *More Under-Reactive*, and *More Strategic*)
 - ► Remind Yourself that Strategic Behavior is the Key to Influencing Important People (e.g. Dad) and Desirable Persons (e.g., girlfriends)

Jim's Executive Self-Control Habit

- → Every day, and every Two Hours, to make it a habit:
- **(1)** Rate your Current Impulsiveness and Executive Status!
- Have you been **S**cattered (Been on more than one task or idea or topic at a time) in the last 2 hours?
- Have you Been an <u>Open Book</u> (i.e., Talking about You, Your Concerns, Your Life Story...Talking Like a Russian Novelist; <u>Disclosing Too Much</u>, Too Quickly...
- Have you Felt <u>E</u>xcited in any manner in the last two hours?
- Have your Thoughts or Speech <u>Raced</u> in the last two hours? (or are they Now Don't underestimate)

(2) Adjust your Daily Activities Accordingly!

(continued)

If You Have Some Vulnerability ('Yes' to 1 question, or unsure) to Dysexecutive symptoms, Engage in Some Executive Renewing Activities and Closely Monitor and Reduce Executive Taxing Activities

If You Have **High Vulnerability** ('Yes' to 2 or more) to Dysexecutive symptoms, Reduce all Executive Taxing Activities (that is, do few, pace and go very slowly) and **Engage Mostly or Only in Executive Renewing Activities****Activity Effects on Executive Skills**

Executive Renewing Activities

Pace / Slow / 1 Thing at a Time

Planning/Organization

Relaxation / Power Nap

Q Reflex/ Deep Breathing

Swimming / Moderate Exercise

Music/Guitar/Singing Reading

Executive Taxing Activities

Overactivity

Stimulating Situations

Stress & Worry/ Rumination

Working

Walking / Prolonged Standing

Meeting New Persons / esp. Women

For Anticipated, Unavoidable Executive Taxing Situations, Liberally Engage in Executive Renewers Both Before and After

Piloting: Internal Self-Monitor

ANTICIPATION

- → How will/does this look to others, WORST CRITIC?
- → Will it help or hurt to turn out the way I want?

■BRAKE ON ALL RED FLAGS

- Perceptions of Inequality, Unfairness, Mistreatment
- Perceptions of "Stupidity" in others
- Perceptions of Being Ridiculed
- Feeling Lonely or Horney
- Anger / Frustration / Excitement

COMPENSATION

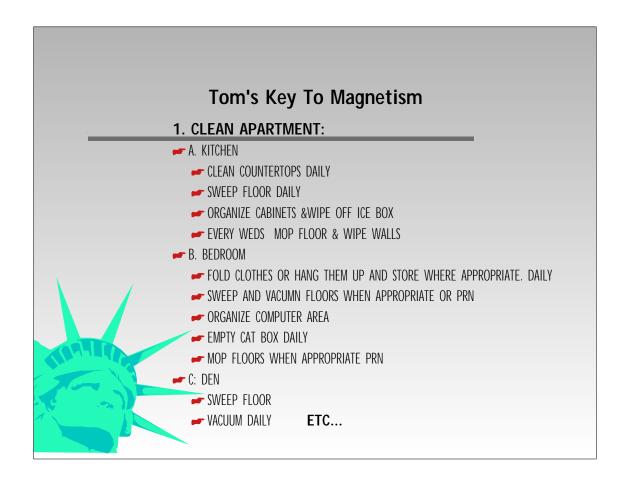
- Inner Running Dialogue with constant Red Flag review
- Practice inhibiting and braking responses during all Red Flags!

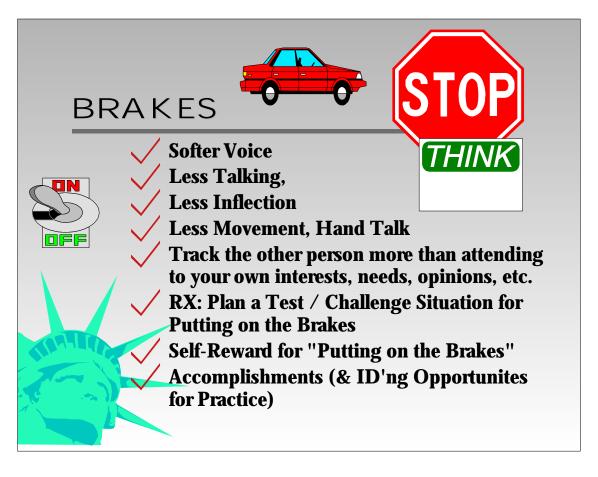
Tom's Rules of the Road for Successful Relationships

- Brake on Touching, Getting Closer than Two Feet of a Woman Until After a Second Formal Date (Date means going out with MUTUALLY agreed upon possibility of becoming a relationship boyfriend/girlfriend combo).
- Brake on Expressing Strong Emotions (affection, like, etc.) With Any Woman Until After a Second, Formal Date (using word 'love' in any context is proscribed until after 3 mos of formal dating!)
- Brake on Hugging of anyone other Than a Relative or Girlfriend (i.e. someone you have dated more than two times who wants to continue dating you)
- If Slow Dancing, No Touching within 6 inches of Butt, Crotch, or Breasts, Until After a Second Date.
- Always Maintain your Personal Space (2 ft.) around Women
- Always Attend by Looking (at face), Being Interested in What A Woman Says, and Keep Your Talking to a Minimum
- Work on Coming Across Gently (Vs. Usually Intense or Like a Ton of Bricks!)

Single Persons Introductory Guide to Relationships

- Rule #1: Don't touch anyone, or get too friendly, before you take them on a 2nd Date.
- Rule #2: Never attempt to date, get fresh, flirt, or touch any new people or potential friends you meet. Grow these friends to increase your contacts with their friends. Only their friends should be considered for dates. That way, if it doesn't work out, you still have a friend who can introduce you to her other friends.
- Rule #3: Compliment anyone you think you might want to date. Compliment for practice to learn how to compliment. Some things to compliment women about, include:
 - Smell nice; Are Funny; Are pleasant
 - Are Nice; are Bright
 - Have a nice personality; Are fun to be with







The Rehabilitation Progress Imperative

- ▼ Attack Incremental Rehab Goals, One Tiny Step at a Time! ...Remember, the Quality of Your Life Depends on it!
 - Do Nothing HALF-BUTT!
 ...That is, use strategies or
 do things half way, and then
 say "but..." *
 - ◆ But I used to could.. .But I didn't use to have to...
 - ◆ But it's hard... But he said...But they don't understand
 - ♦ ...But, What If...?...But my Butt hurts (from excessive butting!)....

P.S.
Every Butt
Leads to...
Crap!

CAREGIVER SURVIVAL RULES

- ■1. Caretakers can not take care of anyone if they BURN OUT from not taking care of themselves. For starters, try scheduling one half day per week off for rest and relaxation, in some from of recreation that does not involve treating, helping, caretaking, or being responsible for anyone else, building to one full and one-half day, and moving toward caretaking of no more than 40 hrs/week
- ■2. It is in the patient and caretaker's best interest to learn to easily & openly ask others for help!
- 3. At least some of the caretaker- patient (usually husband-wife) interaction must include non-caretaking activities i.e. allowing interaction in the patient's areas of residual strengths and competencies especially for leisure activities. (RX: Perform an inventory of every enjoyable activity ever tried or thought of and start planning and experimenting the more non-caretaking activities engaged in, the stronger the relationship can become.

(continued)

•4. 4. Be a "Mirror" and not a "Sponge".

Sponging is absorbing another persons negative emotions (e.g., anger) and reacting to them with similar negative emotions. It is catching the other persons negative emotions and allowing them to control your emotions and reactions. Mirroring is the process of simply reflecting back another person's negative emotions (e.g., "You are angry that I did not come when you first called...Hmm"), without emotional reaction, without obligation to respond emotionally, or to agree or disagree, and without "catching" the emotion. By its nature, mirroring involves a slow, deliberate and open look at the other person statements, and prevents escalation of emotions, allowing you to control your emotions by not reacting. It allows under-reacting or keeping a cool head to help calm the situation, and prevents you from letting another persons problem become your own.

(continued)

■5. Contract with each other to allow mistakes and to not beat each other up when mistakes are made...learning and taking into account the "Rules of Crisis" can help. *Addendum: Necessity of recieving help almost always produces resentment of helper (because it is a reminder of disability)!!

RULES OF CRISIS

- Everyone will be at their worst!
- Our/Their behavior and communication will reflect our/their worst!
- We/They will hold others accountable and Excuse ourselves/ themselves!
- When we are hurting, we fail to appreciate other's hurt!
- Things will get better or worse after a crisis, but will not stay the same!

