SCULPTING

HOW TO IMPROVE MEMORY

THE ULTIMATE MIND POWER MANUAL

THE BEST BRAIN EXERCISES TO IMPROVE YOUR MEMORY AND MASTER YOUR MIND POWER

How To Improve Memory - The Ultimate Mind Power Manual The Best Brain Exercises to Improve Your Memory and Master Your Mind Power

By The Success Sculpting Coach
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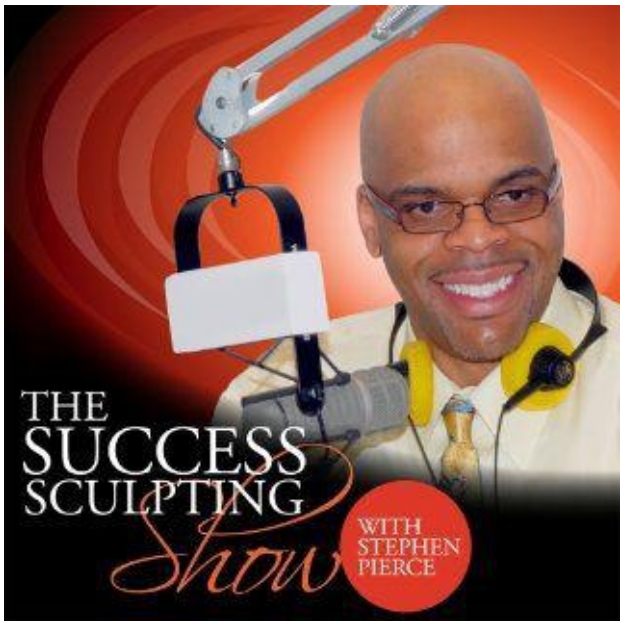

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Chapter One: Introduction

As we drove by Starbucks one day, we couldn't help but chuckle. Starbucks Café reminded us of two stories that we've tucked safely in our memory: one story is about a young fellow who is a ghost writer and likes to bring along his lap top to the café where he could type away and gulp down mugs of his favorite cup of coffee – Americano, he called it.

"You can't blame me, it's soooooo good", he'd say, and we felt compelled one day to warn him not to leave his lap top unattended when he went up to the counter to order his Americano, and to be careful about not spilling his Americano into his lap top. A ghostwriter could not afford to lose pages of written work. It would be difficult to reconstruct what he's written. Even with a photographic memory, he could not re-create the original. He'd have to start all over again.

The other story is that of a book written by a Dr. Dharma Singh Khalsa which he appropriately titled *Brain Longevity*. He trained in Creighton University School of Medicine, Harvard Medical School and the University of California in San Francisco. He is a diplomate of the American Board of Anesthesiology and member and secretary of the American Academy of Anti-Aging Medicine.

In *Brain Longevity*, Dr. Khalsa talked about patients in their 40s and 50s who would come to his office in a state of anxiety convinced that they were sure candidates for Alzheimer's. When he asked them why they believed that, they'd say that they're constantly forgetting things, not able to digest a brief as easily as when they were younger, alarmed that they couldn't remember names, and regularly misplacing car keys. What worried them more, however, was the decline in their mental alertness.

One of his patients admitted, quite embarrassed, that his daughter's soccer team asked him to stop being their referee because he was forgetting who last touched the ball when it went bouncing off. He was calling out scores that didn't make sense and his daughter, who was feeling the pressure from her team mates, had to ask him to give up his position as referee.

The frequent complaint was their "fuzzy brains." Neurologists have a name for it. It's called "age-associated memory impairment", a condition that is most common among people aged fifty and older. As Dr. Khalsa said, it is normal to lose brain capacity at 50 just as it is normal to experience diminishing eyesight at age 40.[1]

It is a generation of frightened baby boomers, Dr. Khalsa says. All of a sudden they're losing their "endocrinological spark as their youth hormones dry up and sexual urges are flattening out. They're gaining weight, losing muscle and hair, and needing more and stronger coffee just to slog through the day. The boomers' loss was Starbucks' gain."[2]

Grin and bear it, if we should, but an increasing number of scientists – including Dr. Khalsa - believe that it is possible to defy the mental aging process. People in their 40s, 50s and 60s can have not only a perfect memory but also brain power.

The brain is a dynamic organ.

Individuals who get older can retain their youthful minds so that their learning ability, creativity and emotional vigor remain intact. They are able to sustain the mental dexterity and sharpness they need as they reach their 70s and 80s.

Charles M. Schultz, the famous Peanuts creator once said that "life is like a ten-speed bicycle. Most of us have gears we never use." We'll disagree with this dithyramb a little. It's not so much life having all these gears, but the mind. The mind possesses faculties that some people have not bothered about. We've heard of cases where individuals with exceptionally high IQs consistently fail in life. We tend to dismiss them as "intellectually lazy" beings who never harnessed the full power of their minds.

Or else we've heard of the oft-repeated complaint, "he's got all sorts of PhDs up his sleeve, but he's completely bereft of common sense."

The mind is a mysterious abyss.

What kind of mental make-up drives someone to open fire in a school cafeteria and shoot aimlessly at human beings with minds that one day would rule the earth? What happens to the creativity of a university freshman who decides to major in Quantum Physics even if his first love is music? How does a

spelling bee champion remember the sequence of letters in a word like *bacillus thuringiensis*?

Or, as the songwriter asked, why do fools fall in love?

That was quite a mouthful that Steven Pinker wrote in *How the Mind Works* (1997). His book had 565 pages (small characters), 565 footnotes plus our rough estimate of 380 references. His main thesis focused on the human mind and the theories of evolution and computation. No wonder he teaches at noble institutions like Harvard and MIT. How much gray matter does a man like Pinker possess? More importantly, would you date him?

Knowing his intellectual prowess, you'd probably hesitate. You'd cringe in fear and dread to think that you could even engage in a mental sparring of sorts with him.

Yet scientists and zealous believers think that each of us has the innate ability to imitate a Pinker or a Darwin or a Christian Barnard if we wanted to. How much brain power – we prefer to call it horsepower – would we need to produce a 500-page treatise on the reproductive cycle of a chironomid or take out a healthy heart and transplant it on someone else?

We'll begin in first base. We'll map the brain for you in the next Chapter and how each area of the brain corresponds to something. We'll look at the hemispheres of the brain and what they're supposed to do for us, including a peek into neutron-transmitters.

In Chapter Three, we'll ask ourselves the question, "How do we keep the brain healthy and how do mental and physical exercises whip our brains into shape? Memory – that elusive asset we're all supposed to possess – will be discussed in Chapter Four. Brain nutrition is tackled in Chapter Five where we look at certain foods for nourishment and see how fats, carbohydrates and micronutrients help the brain acquire more agility.

Some chapters will discuss mental processes – creative, critical and analytical thinking - and what exercises we can engage in to improve these processes. The role of aromatherapy in brain health will also be discussed (Chapter Nine), as well as the practices of visualization, meditation and streaming (chapters ten, eleven and twelve).

We'll revisit speed reading in Chapter Thirteen and then take the back seat as we linger back in history and examine a few of the greatest thinkers.

We'll wrap up the e-book with worksheets that you can use for waking up your brain and bringing out the colors of the mind.

People love to say that the brain is a muscle and therefore needs to be stretched. There are specific exercises to help us with this task.

And maybe – just maybe – we'll be able to answer the question of why fools in love.

In the meantime, let's look inside the brain – yours and mine – and find proof that we too can join the ranks of great achievers one day. After all, as Donald Trump used to say, "as long as you're going to be thinking anyway, think big."

Chapter Two: A Map of the Brain

Writers who describe the brain tend to use the phrase "architecture of the brain." We can see why. To use the term "architecture" suggests that like a skyscraper or an urban piece constituted of concrete slab, the brain is a complex system of beams, columns and walls that rests on the most fundamental elements of graph theory or plane geometry with a dozen or so engineering equations intertwined.

But that's too fancy for our taste. If we have to sound hip about the brain, we'd much rather compare it to the Los Angeles freeway during rush hour. Now that's much better, isn't it? You have movement, dynamism and complexity – so unlike a static architectural production, cold and unforgiving.

If a surgeon peeled off the skin and hair off a human being to expose his brain, we would probably reel and turn away from such a grotesque sight – lumps of raw ground beef held together by a fragile piece of glue. If we had the courage to look inside, however, we'd probably be entranced, marveling at how it does sort of resemble the LA freeway. To be able to see the brain in action would be like watching shooting stars and passing comets in the universe.

Peeking into the Brain

If you read about the brain, you'll come across terms that you may have already learned in high school, so this section will be a quick review of the parts of the brain.

To better explain what the brain consists of and which parts are responsible for certain functions, we'll take a hypothetical situation. Imagine that you're in the cockpit of a 747, seated beside the chief pilot. In this scene, you are an invisible observer; the pilot does not know you're there. He has an emergency situation to deal with but for as long as there is no immediate danger he sees no need to announce it to the passengers.

The pilot has just received news that there is a deadly storm heading towards the aircraft. He has about 20 minutes to think of a set of maneuvers to either (a) avoid the path of the storm or (b) maintain his present course so he could land at the intended destination on time.

As he communicates with the air traffic controllers, he begins to realize the seriousness of the situation and his mind literally goes on overdrive. There are 274 lives he is responsible for. The kinds of decisions he makes will either save those lives or cut them short. The traffic controller's words were "you can try to weather the storm, but it has a wind velocity which we're not sure the aircraft can withstand."

The pilot's brain goes to work. Right beneath each statement is the part of the brain that's working (in bold) as he's thinking and deciding – and reacting.

The pilot is informed he's got 20 minutes to make a decision: he either changes his trajectory completely or stays the course hoping the aircraft is strong enough to withstand battering from the storm. He's breathing faster and his heart rate is pounding: **HINDBRAIN**

He steers the plane a little to the left, presses some controls on the panel to increase altitude. He does these steps almost by rote: **CEREBELLUM (located in the hindbrain)**

His eyes are focused in the vast darkness before him. He blinks constantly making sure his path is clear: **MIDBRAIN**

At this point, the pilot is analyzing his fuel capacity. If he changes trajectory to avoid the storm completely, that means a three hour delay. Does he have sufficient fuel? His mind races as he tries to remember other emergency procedures. What are the pros and cons? He recalled a fellow pilot who had to make the same kind of decision and almost didn't make it: **FOREBRAIN**

Pilot is now arguing with himself. He keeps saying "what if" and then answers it himself. His abstract reasoning has never been this sharp before. These emergencies are making him think at double the speed. Looking for answers…imagining the alternatives…evaluating scenario A versus scenario B: **RIGHT HEMISPHERE (located in the cerebrum**)

Pilot re-establishes communication with air traffic control. "I'll change course." He outlines his plan in detail, talks to the control tower and assures them he has sufficient fuel: **LEFT HEMISPHERE (located in the cerebrum)**

Pilot thinks about his wife back home. If he doesn't make it, did he update his will? If he makes it, he'll ask for a month's leave, take his wife to the

Caribbean for a much needed vacation. It's been a heck of a month, he says to himself. They hardly saw each other. Is she seeing someone else? **FRONTAL LOBE**

Two hours and twenty minutes later, pilot taxis into runway 8B. "Ladies and gentlemen, welcome home. We apologize for the delay. We needed to change direction because of a storm brewing over Hokkaido Island in Japan. We'll be pleased to make alternatives for those who have been inconvenienced by this delay. Thank you for flying with Brainwave Airlines, your thinking airline."

Pilot walks into the pilot executive lounge and is greeted by a warm round of applause. "What's this, he asks. "Your reward for thinking and planning well", says his boss. Someone told us you love sushi and kimchi – well, here's a plate. No charge. Enjoy it." His colleagues shake his hand as they exit the lounge saying "well done, kiddo. Thank goodness, cabin air didn't shrink your brain. Brilliant maneuvering!" Seeing the sushi, he had almost forgotten how famished he was. He sat down and devoured the meal, relishing every morsel. The best meal he's had in months! **PARIETAL LOBE**

As he drives to his hotel, he made a note that he'd have to reconstruct the events of the night and input it into the database of the emergency manual for pilots. He'll do that first thing in the morning while it's still fresh in his mind and can remember every detail and maneuver he executed in the last three hours: **HIPPOCAMPUS**

End of film clip. Let's summarize what we've just learned about the components of the brain.

One incontestable fact we must accept: the brain is the most complex part of the human body.[3] We'd like to add our bit: some brains are more complex than others; this is why we have individuals who are more complicated than others and hence difficult to understand.

The brain weighs only three pounds but this lightweight mass holds our intelligence, puts some sense to all five senses, sets our bodies in motion and directs our behavior. Taking all the brains of our fellow human beings and putting them together would enable us to define civilization and encapsulate the story of humanity.

Since much knowledge has been gained from the study of the brain in the last two to three decades, Steven Pinker says that the United States government thought it appropriate to designate the 1990s as the Decade of the Brain. He quips, "But there will never be a Decade of the Pancreas."[4] This is because the brain enjoys special status. That special status resides in the brain's ability to make humans see, feel, think, choose and act – and calls it information processing.[5]

Just as the cell is the basic unit of human life, the brain is made up of three major units:

Forebrain
Midbrain
Hindbrain

Forebrain **-** this is the most highly developed section of the brain. It contains the cerebrum and other structures. When people look at pictures of the brain, the first thing they usually see is the cerebrum which is located at the top of the brain where most of a person's intellectual activities come from. It houses your memories, makes you capable of planning, imagining and thinking. It is the part that assists you in recognizing your friends and family, enjoying a movie and playing solitaire.

Midbrain – this is located in the topmost part of the brainstem and controls our eye movements and other voluntary movements.[6] If you recall our film clip, when the pilot kept blinking his eyes to look out in the dark skies

and adjusting his glasses, his midbrain was called to task.

Hindbrain – you will find the hindbrain right above your spinal cord. This is where the cerebellum is located. It resembles a wrinkled ball of tissue. It is the hindbrain that directs the body's respiratory and heart rates. It coordinates bodily reflexes and is also responsible for movements you make automatically or by rote. For example, when you play the violin or run a marathon, the cerebellum located in the hindbrain goes to work.

Looking deeper into the brain, we now focus on the cerebrum which has two hemispheres. As we said earlier, the cerebrum is located in the forebrain. These hemispheres are separated by a deep dividing line; this division does not prevent the two hemispheres from sending messages to and from each other. They look similar in appearance but differ in their functions.

Hemispheres of the Brain

Left hemisphere – when an individual utters words, it is the left hemisphere that is working.

Right hemisphere – when an individual engages in abstract reasoning or logic, it is the right hemisphere that enables him to practice these skills.

The brain and the body send signals to each other and when they do, these signals cross over. This means that the right hemisphere controls the left side of the body, while the left hemisphere controls the right side. Therefore, when one side of the brain is affected or is hurt, the opposite side of the body is affected. To put it more clearly, if an individual has had a stroke in the right hemisphere of the brain, his left arm and leg are paralyzed.[7]

As we explore our thoughts and how they get processed in the brain, we will need to know about the brain's other components. Note that each hemisphere is divided into sections – more commonly called lobes. These lobes – frontal, parietal, occipital and temporal - have their own respective functions.

Frontal lobes – there are two frontal lobes located behind the forehead. When you sit down and make a shopping list, plan an itinerary or argue with your boss, these are the two lobes that enable you to perform these functions. The frontal lobes are what the Neurological Institute of the NIH calls a "short-term storage site"; that is, keeping one idea on standby while you weigh other

ideas. The left frontal lobe is where you'll find *Broca's area*, which processes your thoughts into words.

Parietal lobes – remember our airline pilot who loved sushi and kimchi? When he ate every bite and cleaned out his plate, his parietal lobes were at work. The pilot's smell, texture and taste for sushi were processed by his parietal lobes and more specifically by the primary sensory areas. These areas are information receptors especially when the information has to do with temperature, touch and taste. The parietal lobes, however, are not limited to taste and smell but also process reading and arithmetic functions.

Occipital lobes – these lobes are located at the back of the brain. They receive images that the eyes see and send those images to be stored in the memory. If the occipital lobes are damaged, blindness can occur.

Temporal lobes – these are found in the visual areas of the brain and are located just underneath the parietal and frontal lobes. Are you a fan of Eminem? Do you swoon over Tom Jones when he sings "What's New Pussycat?" Your temporal lobes are at work. The temporal lobes process information received by the ears; these lobes contribute to memory functions – including anything to do with music, as well as sensations associated with taste, sound, light and touch.

Venturing into the deeper recesses of the brain, we find three distinct components:

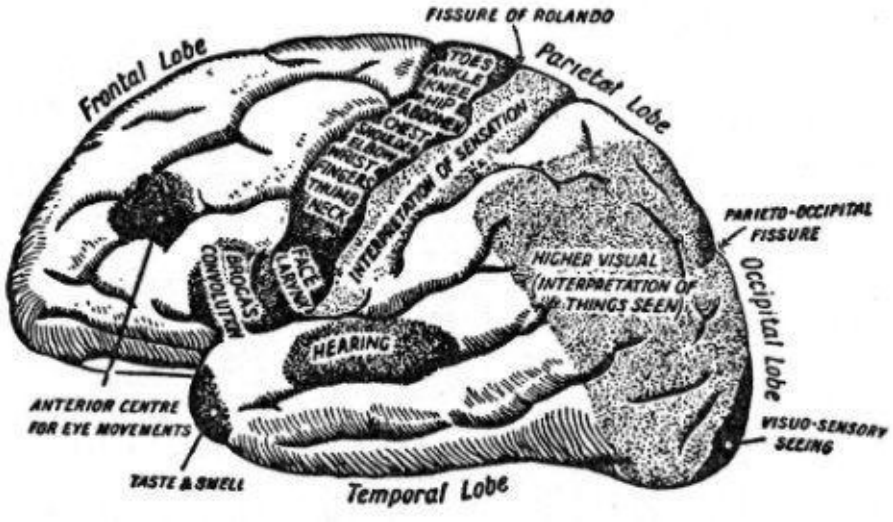
Hypothalamus
Thalamus
Hippocampus

The NIH describes these three parts as the "gatekeepers" that lie in between the spinal cord and the hemispheres of the brain. These three elements orchestrate our emotions and the manner in which we respond to such emotions.

Hypothalamus – this serves as the center of vital functions. It drags you out of bed, makes you nervous and your hands clammy when you're about to break the news to your parents that you failed Physics, and it works every time you're ecstatic, frustrated or raving mad.

Thalamus – the thalamus is located close to the hypothalamus and acts as a traffic coordinator between data to and from the spinal cord and the cerebrum.

Hippocampus – this component is small in size and yet acts as a warehouse of memories. It's like the hard disk of your computer. It stores your files and then when you need them, retrieves them for you. It also has nerve cells that come in clusters called basal ganglia, responsible for triggering movement.



No discussion on the brain is complete without mentioning neurotransmitters. These are the chemical messengers of the brain that carry thoughts back and forth from cell to cell. The health of our brain depends to a

significant degree on the proper balance of neurotransmitters. So when people are diagnosed with Alzheimer's, it means that there is widespread death of brain cells. The brain is flesh and blood. This is one thing that people have to remember. It is NOT the mind. The brain is the organ and like any organ of the body, it needs nutrition and rest. The mind is WHO we are – the software that carries out the functions of the hardware – the brain.

Brain Neurotransmitters

Acetylcholine – this substance is the principal memory carrier. People with Alzheimer's show lower levels of acetylcholine. It dictates if our muscles have to contract or make our glands secrete hormones.

GABA – this is *gamma-aminobutyric* acid and is referred to as a neurotransmitter that inhibits because it calms down cells. It regulates muscle movements and is an essential part of the visual system. Epileptic and Huntington patients usually take drugs to increase GABA levels in the brain.

Serotonin – this is another inhibitory neurotransmitter that acts on blood vessels and promotes sleep and regulates the body's temperature. Together with norepinephrine, it keeps individuals in a good mood. It is therefore likely that crankiness in older men and women have a biological basis. Out of 40 million Americans aged sixty five and older, more than six million could be candidates for depression, and most of them consider it as part of the aging process. Dr. Khalsa, however, says that it is possible to overcome shortages of these mood neurotransmitters through nutritional and pharmacological solutions.[8]

Dopamine – another neurotransmitter that influences mood and body reflexes. Examples of low dopamine levels are seen in Parkinson's patients who suffer from rigid muscles and lose control over their movements. This indicates that dopamine levels have decreased in some segments of the brain.

Scientists have discovered at least 100 neurotransmitters and they all have their individual chemical activities. The above are some of the key neurotransmitters that preserve some of the more important functions of the brain.

In the next Chapter, we'll talk about how to keep the brain healthy, banishing the myth that it can potentially "disintegrate" with age.

Chapter Three: Keeping the Brain Healthy

Next to worrying about your car's wear and tear and the sagging muscles in your body, how often do you think of keeping your brain fit and in the best of health?

When you consistently forget things and are unable to think creatively about your daily activities, do you simply shrug your shoulders and attribute this to the aging process?

A member of your family has been diagnosed with Alzheimer's. Do you consider this disease the same way people think of cancer – that is, as an aging disease?

How much time do you allocate for mental and physical exercise?

Regardless of age, these questions should be gnawing at you because the sooner you take care of your brain, the better your chances of becoming alert and productive in your post-retirement years.

Does Age Have Anything to do with Brain Health?

Nonsense. The thinking that brain health declines with age is a misleading belief and closes the door to exciting opportunities and research about age and the brain. If you read the web sites of the American Society of Aging and the American Association of Retired Persons, you will realize that there exists overwhelming evidence that older individuals can have as much brain power as teenagers.

Thanks to Princeton University researchers and others who have been studying the science of the brain, a "renewing" mechanism was discovered in mature brains; this renewing mechanism creates neurons that travel towards the cerebral cortex and become a part of the brain's processing system.[9]

When a fetus is formed, the brain begins to develop at just three weeks old. This pattern of growing, developing, expanding and adapting continues throughout its lifetime. Over 100 billion neurons are formed in a baby. In the next three years of the baby's life, these neurons will develop trillions of what

Dr. Gary Nulls calls "synaptic connections." With the passage of time, those synapses that are exposed to constant stimulation become stronger and spread out, while those that are seldom used are discarded.

Scientists have a name for this period of adaptive growth: "plasticity." The Center for Brain Health in the University of Texas in Dallas takes the phenomenon of plasticity seriously. The Center has been conducting research for the last fifteen years which involves the close relationship of brain research and clinical care. Their primary objective is to promote the discovery and application of new interventions (e.g., cognitive-linguistic, pharmacological, social) to maximize mental functioning.[10]

Up until a decade ago, physicians were telling patients who were complaining of memory loss and mental slowdown that this was something that comes as a result of the aging process: old neurons would die and nothing could replace them.

In a broad sense, brain health relies on constant stimulation, mental activity and challenge, thus confirming the popular expression, "use it or lose it."

Age, therefore, should not be our excuse. Our bodies, when taken care of conscientiously, will continue to serve us well. The same is true for the brain - if given the same proper attention, it will not abandon us. There is a price tag that comes with this. That price tag is our vigilance about the negative factors that contribute to unhealthy brains: environment, nutrition and diet, stress and emotion. An ounce of neglect in any of these factors could translate into a pound of trouble later on.

How to Keep the Brain Healthy

We used to think that if we read six books a year, did crossword puzzles on the subway, and add and subtract numbers without using a calculator, we were doing our share of keeping mentally fit. These days, a lot has changed. Mental exercises like these are still excellent exercises and are being used by thousands, but new studies indicate that there are other mental – as well as physical - exercises that we can do to keep our gray matter in tip top form.

Remember those innocent days of our youth when we had fertile imagination and could easily conjure up situations and play pretend? When we

ask our friends, “do you want to play with me today”, we’re actually extending an invitation for them to join us in whatever fantasy that’s

brewing in our minds (“you’re the doctor, I’m the nurse, and we have to cure little Sue because she has a stomach ache”). It was a wonderful time of life – our curiosity and our sense of discovery filled us with challenges.

Our entire childhood was like a burst of lightning and an amusing upward learning pattern that cultivated our minds and fortified our brains.

Mental Exercises

As we said earlier, one way of keeping the brain healthy is by doing some mental exercises. If you do crosswords or calculate numbers in your head, that’s great, keep it up.

We’d also like to suggest the following that you can do whether in school, at the office, in the restaurant, in the parking lot, *etc.*

Exercise 1: In School

If your school cafeteria has a signboard describing the menu for that day, make an effort to read it in full and try to memorize the items on the menu. We tend to stare absent-mindedly at bulletin boards and not really absorb anything because the information is either irrelevant or unimportant. Make it a daily habit to read the menu and try to think of ways to remember what you read. For instance, if the menu has a list:

Quiche Lorraine
Clam Chowder Soup
Fish and Chips
Vanilla Pudding, Chocolate Chip Cookies

Herbal Tea

As you read each item, imagine yourself eating these and identifying what each item tastes like. And try this: take the first letters of each item and keep repeating them to yourself. So you have QCFVH. Repeat: QCFVH. One more time: QCFVH. It's no harder than memorizing the acronym of your favorite radio station, isn't it?

If a fellow student ever asks, "hey, does anyone know what the cafeteria is serving today? I'm starving mad." Be the first to tell him.

Exercise 2: At the Office

This should be a fun exercise if you're into languages. You know the saying, it's better to have two brains than one! Most bilingual people have an edge over their unilingual friends and associates. They stretch their brains and make them work harder as they find the equivalent word in a foreign language. In the US, Spanish is becoming the second most frequently used language while in Canada, it is French.

Throughout the day, as you meet people and see objects in the company, think of the Spanish or French equivalent. For instance, you take a break and get up from your desk. You head for the washrooms. You see the following on your way:

English	**Spanish**	**French**
water fountain	"bebedor"	"fontaine"
boss	"patron"	"patron"
flowers	"flor"	"fleurs"
computer	"ordenador"	"ordinateur"
carpet	"alfombra"	"tapis"

Continue this exercise and watch your bilingual vocabulary grow. By putting the words into objects and persons you meet along your way, you are making a conscious effort to work your brain more.

Exercise 3: In the Restaurant (or any public place)

You can take a good look at your waiter (or waitress) and take in his features, any special moles, hand or eye movements, or if he's got a ring on his finger. This is like practicing a bit of detective work, although it may not be a good exercise to do if you are dining with your spouse. Another exercise would be to look around the restaurant and make a guess as to how many customers there are. An alternative would be to spot unusual objects in the restaurant and pretend you've got a photographic mind and memorize their place. This way you sharpen your sense of vision and hearing.

Making a conscious effort to know what is around you helps you define your place in relation to all the persons and objects that share the same space.

Exercise 4: In the Parking Lot

You may have complained a few times about forgetting where you parked the car or getting the feeling that your car had been stolen. This happens frequently in a large shopping mall where the parking lots are located in different quadrants of the building. When you park your car, make a mental note of all possible "aid locators": you're in row #, facing a building (or highway or a large sign), the make and color of the car to your left and right, etc. This way, when you're done with your shopping and ready to leave, you'll know exactly where to go and what to look for. Instead of looking for your car in particular, you'll be locating the signposts, buildings, and other cars that will help you pinpoint the location of your car.

By doing this exercise regularly, we'll doubt you'll be complaining about the same thing again!

A writer who shared a few mental exercises on a web site said that "any routine of exercises which causes you to think is of value. You will be amazed to find how quickly the mind will respond, and in a very short time you'll notice marked improvement in your ability to think quickly, logically and creatively."[11]

This writer also suggested this exercise. While driving, concentrate on the license plate of the car ahead of you. Take the license number and reduce it to a single digit by adding all the digits together. If the result you obtain has

more than one digit, add them. Continue the addition until you arrive at one digit. The writer provides the example below.[12]

978 = 9+7+8 = 24 = 2+4 = 6; 164 = 1+6+4 = 11 = 1+1 = 2;
899 = 8+9+9 = 26 = 2+6 = 8

If you come across quizzes in newspapers and magazines, do them as well. After some time, you'll discover how much faster your brain handles information.

Neurobics

Neurobics™ is a registered trademark involving a system of exercises for the brain. These exercises make use of all five physical senses as well as the emotional sense that are intended to inject life into your old routines. According to the professor who created this concept, Dr. Lawrence C. Katz, neurobics can be practiced anywhere and can be done for fun. These exercises can stimulate underused pathways and nerve connections, thus making your mind fit and flexible.[13]

Dr. Katz based his exercises on findings obtained by neurobiology labs here and abroad. His reasoning is that just as individuals engage in fitness exercises to be fit and healthy, they can also perform exercises that will keep their minds vigorous and youthful as they grow older. He explains that brain cells develop by connecting with one another. The belief a decade ago was that these connections were only possible during childhood and young adulthood; new research suggests, however, that even in our maturing years, the brain still has that quality of re-wiring itself.

Since technology has "suppressed" the number of movements we make when doing a task (for example, the act of getting up to turn on the TV has now been replaced by a remote control), the different sensory structures of the brain have to be kept on "working mode"; otherwise, these abilities fade over time. Note that a large area of the brain processes information sent by all five senses. By doing some neurobics, we enable the brain to process these pieces of information more efficiently and more rapidly. A well-exercised brain trains us to remember names and dates more easily, learn a new computer skill or putting some creativity in our problem-solving and working lives.[14]

A neurobic exercise, according to Dr. Katz, must involve more than one

sense and used in a new way that would engage our attention and add a fresh component to our everyday routine.

We'll list some of the neurobic exercises that Dr. Katz recommends. It is what he calls "cross-training" our brain.

Physical Exercises (Neurobics by Dr. Lawrence Katz)

> Here's a fun exercise. Shower with your eyes closed. With slow, deliberate movements, locate the shower handle, shampoo bottle and soap. Regulate the water temperature. Also, close your eyes as you get into the car and locate the ignition. By shutting your vision off, you allow your tactile sense to get to work.

Take in new smells and flavors. Instead of going to your usual supermarket, try an ethnic or farmer's market. You will experience new sights and new aromas. Instead of Starbucks coffee, perhaps the Lebanese stall in the ethnic market has excellent coffee beans.

Use your least active hand – the non-dominant one – to perform your daily rituals: combing, brushing your teeth, putting on make-up, zippering up, eating your cereals or toast, clicking on the mouse.

Wake up to vanilla instead of freshly-brewed coffee. We all like to get out of bed and reach out for our first morning cup. Instead, we ought to try smelling something different aromas – peppermint, vanilla or cacao. Dr. Katz says that by linking a different aroma to our morning routine, we activate new pathways in our brain.

Go to your local library and borrow a book on Braille. Dr. Katz recommends an exercise learning the Braille numbers for the various floors of your office or school building. You can also obtain Braille numbers information on Wikipedia.org.

Traveling abroad soon? How about forgetting the tour bus and the five-star hotel and instead renting a car, figuring out the map, and heading for a small town where you don't speak the language?

Dr. Katz and Manning Rubin published a book, *Keep Your Brain Alive*, published by Workman Publishing Co. If you need further information, you can

also call Duke, at 1-888-ASK-DUKE.

Physical Fitness and Brain Health

You may have wondered about actual fitness exercises. Does being physically fit help the brain?

Definitely, says the Harvard article published for Women's Health Watch. In laboratories using rodents for experiments, scientists have discovered that rodents who spend most of their time running on exercise wheels have better brains than their more sedentary mates. Similar studies in the past have not found any conclusive evidence that fitness improves brain functions, but a breakthrough study – the first of its kind – was conducted by the University of Illinois (Urbana-Champaign campus) wherein 55 subjects aged 55-79 were measured for their aerobic capacity during walking and treadmill tests. The subjects were a mixture of sedentary and physically active individuals. The conclusion, published in the Journal of Gerontology three years ago, revealed that "physically fit subjects had less age-related brain tissue shrinkage than less active subjects." With the use of an MRI machine, researchers spotted distinct differences in the frontal, temporal and parietal regions of the brain – where tissues in these regions were vital for memory, learning and cell communication functions.

A related experiment also showed that aerobic fitness training largely influenced the cognitive abilities of women and men aged 55-80. It was learned that exercise benefited human abilities such as attention, organization and planning, and that a combined program of aerobics and strength training were more effective than aerobics alone. Finally, it was also discovered that exercising for less than 30 minutes per session did not have any significant impact on cognitive functions.[15]

In the next Chapter, we will discuss…er…hmmm….oh yes, memory!

Chapter Four: Memory and the Brain

"Nothing is more responsible for the good old days than a bad memory."
(Franklin P. Adams or Robert Benchley?)

Why the question mark after Benchley's name? The answer is not that our memory is failing us – it does look as if we don't remember who said that line. The truth is, we had clipped that quotation from a newspaper which credits Franklin P. Adams as the owner of the quote, but in a book about memory written by Robert Allen, the same quote appeared but cites Robert Benchley instead.

Thanks to our memory, we remembered seeing that line before and all we had to do was go to our quote file and there it was. Either both men did utter the same sentence (highly unlikely) or it's a mere typographical error (more likely).

A bad memory is the last thing we'd want. We scold ourselves for forgetting to buy an important ingredient after we've come back from the supermarket. We scold ourselves because we forgot our wedding anniversary and hence got a severe reprimand and a cold shoulder in return. We scold ourselves because we forgot our dental appointment and then got fined $50.00 for a no-show. Unfortunately, even dentists act like policemen nowadays. One fines you for speeding, and the other penalizes you for not showing up. If we had to pay fines for everything we forgot, we'd be bankrupt by now. That does not bode well for our financial future; nor does it bode well for the future of our mind.

Brief Visit to Memory Lane

What exactly is this thing called memory?

It depends from what perspective we look at it. In Psychology, memory is a human being's ability to store and remember bits and pieces of information and eventually to use such information when the need arises. Memory used to

fall under the field of philosophy, but in the early 20 century, it was integrated into cognitive psychology. Today, memory now properly belongs to a branch of science that combines cognitive psychology and neuroscience. Thus, it is now under the realm of cognitive neuroscience.

Given that the study of memory in cognitive neuroscience is complex, we shall not attempt to dissect it and examine its numerous facets. This complexity has resulted in a multi-classification system wherein memory has been classified by duration, by information type and by temporal direction.[16]

For our purposes, we will take the first classification – by duration – and explain it briefly before we deal with ways to improve our memory. Under memory by duration, we have three types:

Sensory memory
Short-term memory, and
Long-term memory

According to Wikipedia, sensory memory corresponds to the first instant that a person or object is noticed. This observation sometimes moves into the sensory store, and qualifies as short-term memory. Sensory memory means that the observation or perception lasts from milliseconds to seconds. Short-term memory, in turn, corresponds to memory that occurs from seconds to minutes. Immediate interaction with things, objects and persons constitute our sensory memory as they are information produced by our five senses. Touching, smelling or seeing are faculties that enable us to remember more easily.[17]

Long-term memory is memory that is stored and then retrieved after days and years.

An example may help us understand this system of classification better: supposing someone gives us his number. We remember it for a few seconds – maybe even up to a minute or two, but soon forget it. This is short-term memory at work. On the other hand, we remember certain phone numbers that we use frequently. Our baby sitter's number, the pharmacist's, our husband's office – these numbers are stored in our long-term memory.

Memory Improvement Techniques

Robert Allen wrote a useful manual on improving your memory and certainly does not read like a technical manual similar to those you receive when

you purchase computer hardware. With craft and imagination (and lots of color), he sets out some techniques and actual practices on how to maintain horsepower for your brain. This section will cover general techniques that generate benefits for us in the short and long term, and in the worksheets in Chapter Fifteen, we describe some exercises that you can do. You don't have to adopt all of them. Choose a couple or at least one exercise that you can do consistently to develop your memory. One exercise is better than none. As Robert Allen said, "If you start today and practice, practice, practice, soon your memory will be as a retentive as flypaper (though what gets stuck to it will, with luck, be more useful)."[18]

It's a pity that our memories don't act the same way as computers. A computer-like brain would be a boon to our daily lives wouldn't it? The human brain, although not as dazzling a performer as a Pentium IV, is far more complex; however, while it may not be able to spew out chunks of data in minutes, the human mind has been responsible for how humanity and civilization evolved. This makes memory a very valuable asset and tool. It is not mechanical; it's the stuff we're made of.

Before describing specific memory improvement techniques, we'll take a quick refresher on two aspects of memory: learning and concentration.

Each person has his own way of learning and concentrating. These two stages are prerequisites to memory building. Learning is the acquisition of data and actual skills, while concentration is the mind's ability to focus well on something with the least amount of distraction.

Learning

Robert Allen says that individuals learn in three ways: looking, listening and doing. There are individuals who rely mostly on sight, others on their sense of hearing and still others who learn by doing. Certain measurements exist to gauge one's most predominant learning style. We'll deal briefly with some of these practical tests:

For instance, after watching a movie, which part do you remember most - the dialogue, the action sequences, or the things you did, like driving to the cinema, buying the movie pass and popcorn? If you answered "dialogue", that makes you a listener. If you answered "action sequences", you are a looker, and if you answered the "things you did", that makes you a doer.

Another example: if you moved to a new city, how would you find your way around: (a) ask people for directions, (b) buy a map, or (c) walked around the neighborhood to familiarize yourself with the layout of the city? If you answered (a), you are a listener, if you picked (b), you're a looker and if you chose (c), you are a doer.

Of course we need more scientific tests to determine how a person learns and what type of learner he is – a listener, a looker or a doer. Two or twenty two questions will not result in an accurate assessment, but Allen's examples at least give you an idea of his learning theory; and as we said earlier, learning is an essential ingredient of memory.

A learner who listens is one who enjoys sounds – especially words – and finds powerful meanings in them. Listeners tend to remember best what they've absorbed through their sense of hearing, rather than from any other sensory perception. Lookers, on the other hand, react best to visual stimuli so anything they see is understood and retained more efficiently. The doers are individuals who like to roll up their sleeves and dig into the trenches. They put emphasis on practical experience; to them, doing things hands-on holds more meaning.

Allen believes that it is rare for anyone to learn things exclusively in one style. He says the best form of attack would be to combine all three learning styles and adapt each one to a given situation.[19]

Concentration

You can have the best tutor for memory building, but if you can't concentrate, it would be difficult to have much of an efficient memory. Concentrating is a difficult art to master; look how much technology has taken over our lives. In the mind-training courses he took throughout his life, Allen says there is one technique that might help some individuals develop their concentration skills. This one is adopted from a Far Eastern culture, he says, and is a century-old practice, but is still valuable. It sounds easy enough but your initial efforts at actually doing it may seem futile:

Light a candle and set it on a table where you can see it clearly;

Stare at the candle for two minutes and take in every detail: color, wax, size, the flickering of the flame, etc.;

Close your eyes and keep the image of the candle in your mind's

eye – hold this image for as long as you can;

Don't be discouraged by your first or second attempt. Keep trying until you can hold the image of the candle as long as you can.

Now that we've dealt with the two indispensable ingredients for memory building, let's "concentrate" on the ways to improve our memory:

What do you think is the most fundamental tenet for improving your memory? Allen states it clearly. Take care of yourself!

Body and mind are one. Don't kid yourself thinking that you can set about your merry way doing things you want to do and neglect your physical self. The following rules, Allen says, are things you hear repeatedly. They still have their weight in gold – old advice but good advice, so pay heed to them:

1) Sufficient sleep

Not having enough sleep is a barrier to concentration and learning. On those days where you had insufficient rest and sleep, were you as productive at work or in school? Did you remember more and retain more, or did you brain feel fuzzy?

2) Balanced Meals

The experts have stressed, over and over again, that a good, balanced meal is therapy for stressed-out and burned-out lives. Good, healthy eating is essential for our memory to function at an optimal rate. Without the fuel our body needs, how can we expect our mind to be at its peak performance? Fresh and vegetables should fill your plate. According to researchers, those who eat breakfast have heightened powers of recalls than those who skip this important meal of the day.

3) Fresh Air

To benefit from fresh air, learn to breathe properly, and to be concerned about the air quality in our homes and offices. This means that as much as possible, we should have a window open while working, maintaining a comfortable temperature in the room. Stale air that is not allowed to circulate properly affects our concentration and mental processing abilities.

4) Physical Exercise

Not many people appreciate aerobics or weight-lifting. If you're one of them, go for long walks or swim laps. The idea is to exercise at least 30 minutes per session most days of the week.

5) Alcohol and Smoking

Big NO! The famous "hang-over" we talk about after a night of partying and "boozing-up" can impair our thinking, concentration and memory. For our memory to work, eliminate alcohol and smoking from your routine especially if you do it to excess. An occasional slip-up may "produce a mere memory blip, but long-term abuse can mess up your mind in various unpleasant ways. Loss of memory will certainly be one of them."[20]

In Chapter Fifteen of this e-book, we have prepared a worksheet for memory building exercises, culled from a few works from recognized experts on the subject.

Memletics: Hype or Truth?

Memletics should not be confused with mnemonics, although the two are closely linked. Mnemonics has been in use for several decades but it won't hurt to "refresh our memory" a bit: mnemonics is a memory helper and serves an educational purpose. Most of it is verbal and special words or phrases (and

sometimes even poems) to help an individual remember something – as in lists.

Mnemonics presupposes that there are two kinds of memory: natural (the one we're born with) and artificial (the mind training tools we learn, practice and use to remember a considerable amount of data). Some people have advanced the idea that memory feats could be achieved with a properly-trained mind that the natural memory may be incapable of achieving.

Memletics is an offshoot of the revolution that gave rise to many memory and learning techniques that have been created, designed and marketed by individuals and companies.

The entrepreneurs who came up with Memletics – which they define as an accelerated learning program – say that it is really all about mental fitness. Memletics comes from two words: "**mem**ory" and "ath**letics.**" It rests on the principle of mental fitness as the triggering factor for better learning and better memory through the use and application of several approaches. The developers call it an integrated learning system that enhances brain performance. The brain has a vast reserve of "raw material" and the course aims to help individuals process this raw material, so that unused powers of the brain come to the forefront.

The company who developed Memletics claims that it is a unique program because it compiles the research findings from different undertakings involving human performance. An improved memory is one that is mentally fit. And it is this degree of mental fitness that determines a person's ability to learn and remember new information.

We have read a few testimonials from people who have taken the Memletics program – some have praised it for producing a marked improvement in their memory. The Memletics developers explain that just as you don't expect to run a marathon after having jogged a week, you can't expect these mind-training techniques to instantly endow you with a photographic memory. Your muscles take time to develop, and for them to reach their full potential, you have to use them consistently over a sustained period of time.

The same holds true for your brain, which as you know, is also a muscle which needs to be trained.

This is one testimonial that was obviously written by a student:

"I was searching for study tools. I was randomly googling for learning tools, accelerated learning, memory techniques *etc.* Suddenly I came across one site http://www.learning-styles-online.com. This site has a learning styles inventory test. It is a 70 questions test with simple questions. I did that test and they showed my inclination about how my learning abilities are less in some areas and how they can be improved. On this site I got the link site http://www.memletics.com which they explain as Memory Athletics."[21]

Two more testimonials (this time from individuals who purchased the manual/book from Amazon:

"I am a professional investment advisor with a national firm (for 12 years) and have a four year degree from a major university in Finance. My advice to you is to NOT invest your dollars here!

I bought this book because I am studying for the CFP (Certified Financial Planner) exam. I fell for the hype from the back page of the book, and I am embarrassed because I should have known better than to trust these sources I'd never heard of; hokey testimonials. I also failed to really evaluate that Amazon average "5 star" customer review. Ouch. It must've been late that night.

If you want slightly above juvenile writing ability, a couple hundred pages of hackneyed phrases, goofy charts and pictures, and pathetic documentation, you'll find these attributes in "Memletics." At $50 a copy, this book is a real rip-off! It represents little more than slick marketing (legit looking cover/techy-sounding title) of a hodge-podge of information that is, for the most part, at least twenty years old.

The index to this book was my first clue that the author is at best a hack (it is out of sync with the book...if it says "noise and concentration" p 34, it's really on pg 32...). Basic errors like this set the tone for worse things to come (like the horrible writing). It's like one of those "vanity press" cookbooks only worse."[22]

We had to extract only the relevant comments for the book review but we have provided the link in the footnote so you can read the entire review, if you

wish.

Here is the last testimonial from a Chinese student who is studying to be a doctor and who also bought it from Amazon.

> “FYI, it did not seem to be a great book when I first skimmed it. I'm skeptical. But, then I made straight A's. Now I need to go back and pay attention to it! This book changed my life. I was getting stressed out. I'm middle aged, back in school and working. I know I'm trying to do too much. But, I want to go to school and I have to work. I want to do it all. But it was clear I could not keep it up, I was stressing. Then, finally, a system that works. So I can get good grades, and more importantly learn! I just knew there had to be a better way, and this is it. Before this book, I was struggling. I'm in Chinese medical School. It is fact intensive, complex and intense. Classes are 'taught' by Doctors who are not teachers. My grades were good, but I was working too hard, and spending hours and hours at re-learning things I kept forgetting. I had no time to question, what I was being told, or to understand. Worse, tests were full of questions that expected me to see relationships. Now, I can get thru it all. Now, I know what to do and how to do it. Memletics is especially good when there are just too many facts to cram in my brain. So far, it is a great book, but I've just started to use it. It has more to offer, that I have not tried yet.[23]

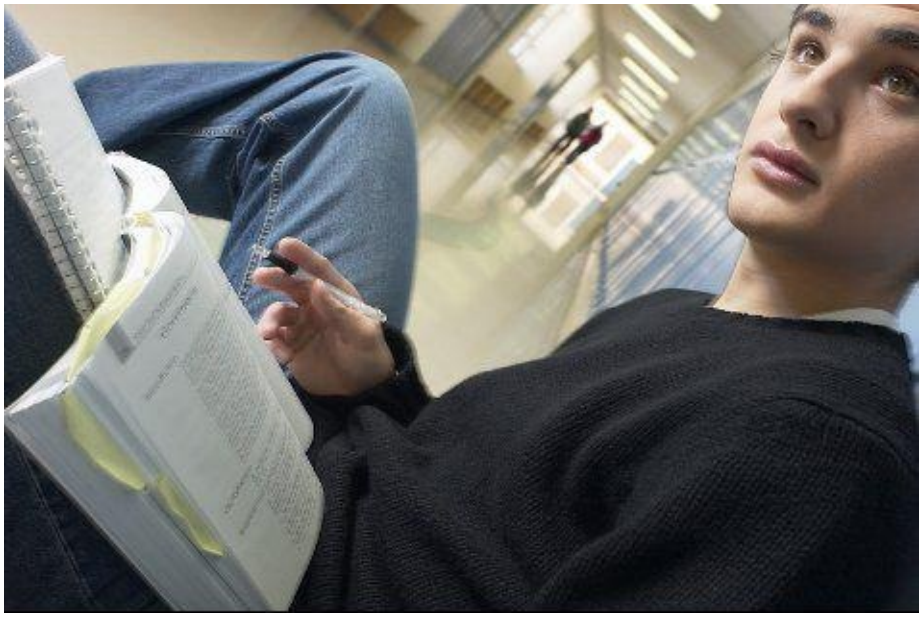
In reading the description of the Memletics course program, it does say that without much mental effort on the part of the user, their product cannot improve memory. They warn people to stay away from a product that promises to improve memory without effort. They compare it to taking a weight pill without exercising.

Therefore, based on the testimonials we came across, one individual out of three gave a negative review. No doubt it has helped improve the learning and memory abilities of individuals; and these individuals most likely performed the exercises asked of them.

People who seek treatments for their illness report improvement while others lament the side effects of the treatment. It is the same with mind-training tools and approaches. One program may work for some and it may fail for others. The trick is to use your judgment and assess your own progress and

skills.

So to answer the question: is Memletics hype or truth? We would have to say, it depends how much you **<u>want</u>** to gain from it.



Chapter Five: Brain Nutrition

You may not see the direct link between diet and brain health since what we put in our mouths goes downstream and not upstream. But what we eat has a lot to do with how healthy our brain is. Granted, food does not travel up to the brain and its nerve cells, but blood carries nutrients and oxygen, and if that blood is tainted, then how can it be an effective carrier of good vitamins and minerals?

The link between diet and brain health can be summarized in this continuum:

> Bad food = unhealthy and sluggish bodies = disorders + diseases = slower brains

"What we ingest is also fundamental to how we think and feel", says Dr. John Ratey. "The brain is an incredibly active furnace, consuming 25% of the glucose and oxygen we take in. It burns glucose as its sole fuel, and yet it has no storage site for it…The brain also needs a range of other nutrients…Even minor nutritional deficiencies can be associated with changes in mood. Memory loss, confusion, depression and other mental disorders in the elderly, once attributed simply to aging, can also be consequences of a poor diet."[24]

The next question logically would be – so what foods can we eat to make our brains healthier – including sharpening our memories and "making learning a breeze?" We'll focus on the basic foods groups – fats, carbohydrates, micronutrients and other kinds of foods that would supply us with the vitamins and minerals we need.

The Franklin Institute worked with nutritional counselor Debra Burke to come up with general dietary guidelines to optimize brain power.

Fats

You may have heard someone say once upon a time that nuts will

improve your memory. There's some truth to that statement. Our bodies need essential fatty acids (EFA). Seeds, raw or dry roasted nuts are a source of EFA. Your eating routine must include walnuts, pumpkin seeds, flax seeds, and other types of nuts. If you can get cold pressed oils from these nuts, this would be an added benefit.

Omega-3 essential fatty acids can be sourced from salmon, sardines, trout, tuna, herring and mackerel. Many people do not like fish, but changing our eating habits to include fish at least once or twice a week to start makes for a healthier brain. Wild fish, rather than farmed, are better. Needless to say trans-fats must be avoided.[25]

You can also get EFA from avocados, fresh coconut and extra virgin olive oil. Meat is also an excellent source of EFA, but as much as possible try to get meat and dairy products from animals that were raised naturally. People in the industry call it "free range" animals; this means that the animals were allowed to run free in open fields and grasses so their diet (and what we eventually consume), are rich in EFA.[26]

Carbohydrates

We need carbohydrates to replenish our supply of brain fuel glucose; this is why we should eat frequent small meals instead of three square meals a day. The inability to concentrate and feelings of weakness can result from hunger or you allowed too much time to lapse since your last meal.

Corn, potatoes, winter squash and cooked or juiced carrots and beets are nutritious and high-glycemic foods; so are whole grains, cereals and crackers. The only problem with consuming foods rich in carbohydrates is we could raise our sugar levels unexpectedly, but this can be corrected if we combine them with sources of protein. As examples:

Egg with toast
Soy burger with corn
Salmon with potato

Jean Carper offers this "carb" wisdom: Foods vary greatly in carbohydrate content. For example, a half cup of carrots has only 3 grams of carbohydrates; a cup of cooked macaroni, 52 grams; 2 cups of popcorn, 12 grams; a plum, 7 grams.[27]

Micronutrients

The general idea is that anything that has leaves and is dark colored is a good food with sufficient vitamins and minerals. Fruits and vegetables have high levels of micronutrients. They are rich in antioxidants that help our bodies fight free radicals – culprits of most of today's diseases and disorders.

Nutritionists recommend five daily servings of fruits and vegetables but cancer specialists recommend increasing that portion to nine to ten servings. Use a small fruit or half a cup of cubed fruit as your serving guide. Go for vegetables that are in season and are grown in organic farms.

The idea of nutrition playing a vital role in brain health is clearer when the brain exhibits signs of a mental disorder. Depression is a good example to cite. While there are accepted medication and treatment protocols for this disease, the role of food and nutrition has to come into focus as well. This is particularly important since it is known that people who are depressed generally have little interest in eating or have erratic appetites.

When a person is suffering from depression, nutritionists believe that to have a brain-healthy diet, all kinds of artificial and fast foods should be immediately eliminated: alcohol, simple carbohydrates, white flour products, artificial sweeteners and caffeine. Eliminating these substances will improve the chemical balance of the brain. The major culprits are fried hamburgers and French fries since they block arteries and small blood vessels, and thus interfere with blood flow.

Individuals who have nutrition-deficient diets take supplements to make

up for the gap that results when not enough fruits, vegetables and grains are consumed. Before going on a supplement program, you must speak to your physician and nutritionist so that a thorough assessment can be made of your health.

Specific Vitamins/Minerals For Brain Health

We have read sections from the separate works of Dr. Null and Dr. Khalsa and from their writings have compiled those vitamins and minerals that help brain health and contribute to its peak performance. We'll begin with the vitamins: ***B Vitamins***

Dr. Khalsa believes that the four most important B vitamins are: B12, B6, B1 and folic acid.

B12 deficiency is most noticeable among people aged sixty to sixty-nine (25%) and people over eighty (40%). The reason is that hydrochloric acid – the substance that breaks down B12 in the digestive system – declines with age. Cognitive decline may occur: poor memory, decrease in reasoning abilities and mood fluctuations.

B6 helps to convert stored blood sugar into glucose, and we have already explained earlier that glucose is the brain's only fuel. B6 protects blood vessels and some tests have revealed that it also helps prevent heart attacks. As you get to your middle age, you will need about 20% more of B6 than younger people for efficient cognitive functions. Since B6 also promotes blood circulation, it can improve memory.

B1 or thiamine influences metabolic processes in the brain and central nervous system. Dr. Khalsa says it is a powerful antioxidant. It may get depleted when a person consumes too much alcohol.

Folic acid plays a role in depression. Lower levels of this substance can lead to more serious depression. Dr. Null estimates that about one third of adults are deficient in folic acid. For those who take folic acid supplements, it is recommended that they combine it with 1,000 mcg of Vitamin B12.

Vitamin C

The antioxidant properties of Vitamin C are almost legendary and are known to improve longevity. It helps in creating neurotransmitters such as

acetylcholine, dopamine and norepinephrine and enhances cognitive abilities. A good daily dose for optimal physical and mental function is about 3,000 mg, although Linus Pauling, the strongest advocate of Vitamin C thinks 7,000-10,000 mg daily is the ideal. Many doctors tend to disagree unless a person is recovering from certain injuries.

Vitamin E

This vitamin is supposed to stall the aging process, and hence the brain aging phenomenon. Like its cousin, Vitamin C, it is also an antioxidant and when taken with selenium, can improve the brain's cognitive abilities.

Going now to minerals…

Magnesium

Dr. Null says people who are depressed show a marked deficiency in this mineral. Patients must be encouraged to take magnesium supplements with calcium supplements so that they do not over-react to stress and panic attacks.

Potassium

It is one of the most abundant minerals found in the body so potassium supplementation is often unnecessary. Dr. Null says potassium can be obtained from such foods as bananas, orange juice and potatoes. Before taking any potassium supplements, however, check with your doctor especially if you are on medication for a condition.

Zinc

Zinc has been credited for its anti-aging properties, but people 50 years old and older are deficient in this mineral. It plays a key role in the brain's metabolic processes and destroys free radical molecules in the brain, protecting cell membranes and sparing neurons from damage.[28] For brain longevity, a daily dose of 30 to 50 mg is recommended.

There are other "brain foods" like amino acids – what nutritionists call partial proteins. Examples are glutamine (improves clarity of thought and alertness), tryptophan (the "feel good" neurotransmitter), arginine (converted by the body into a chemical called spermine which aids in processing memories) and other amino acids.

Mental Health: Risk Factors

We now know how to keep our brains healthy; but what can we do wrong to cause them to be unhealthy? Based on literature, the following appear to be the more common causes:

Alcohol and tobacco abuse

Studies have consistently shown that consuming excessive amounts of these substances can affect the brain's performance. It is a vicious cycle - when we drink too much, our mental health suffers, and when we have poor mental health, we tend to find solace in alcohol and smoking.

A study was conducted by Elissa R. Weitzman, a researcher in the Department of Society, Human Development and Health and she found that "Students with poor mental health/depression who drink reported high levels of harm from alcohol: 29 percent reported falling behind in their school work; 14 percent reported having unsafe sex, 12 percent reported vandalizing property and 23 percent reported having five or more harms from drinking. These levels are all higher than among their peers who did not have poor mental health. Risks for harm were especially pronounced among young women who are depressed and who drink alcohol, making alcohol for them a kind of "double jeopardy."[29]

In Ontario, Canada, about 114,000 young students from grades 7 to 12 were surveyed. Some of them seriously considered suicide, the rate being higher for girls (16%) than boys (7%). About 12% of those surveyed reported visiting a mental health professional at least once during the past 12 months. About 10% of them have low self-esteem and 5% were at elevated risks for depression.[30] This study was carried out by the Center for Addiction and Mental Health of Ontario.

Sedentary lifestyles

This point need not be belabored. The effects of physical exercise on our bodies are obvious, but an increasing number of brain studies demonstrate its benefits also on mental health. One distinct benefit is that vigorous exercise increases the amount of blood supply in the brain and improves the number and density of blood vessels in those areas that need them most – the motor cortex and cerebellum, Dr. John Ratey notes. Put simply,

exercise or activity has a similar effect on the brain. The more we use it, the more we stress it, the better our circulation is, and the more fit that part of the brain becomes.[31]

Poor Diets

Scientists have long bemoaned the pathetic diets of the western world. We need to put things in perspective and adopt a global view of how diet affects overall health including mental health. A sound diet, based on the recommended servings of important foods, calorie intake and fewer foods that are likely to promote free radicals such as polyunsaturated fats, would give our brains that added mileage and thus enrich our lives more.

Stress

The ability to handle stress depends largely on a sound mind. Dr. Richard Restak who wrote *Mysteries of the Mind* (2000) for National Geographic encourages us to reduce our frustrations and problems by turning them into challenges. This way we diminish the risks for stress-associated brain damage, especially in the area of the hippocampus, where memories reside.[32]

Apathy, indifference, lack of mental stimulation

If you look around you, you will notice people who are bubbling with energy and passion and seem to have a never-ending curiosity about life, no matter how trivial. You will also notice people who seem to merely amble along, waiting for opportunity to happen or handed to them. They think the world owes them a favor; instead of taking the bull by the horns and creating their happiness, they sit back and take a passive stance. What does that do to the brain on a long term basis?

The eloquence of Dr. Ratey on this matter is something we all need to think about: "Find a mission in your life. A commitment to a calling, a career, even a hobby focuses the mind and the soul. Psychotic patients report that they don't hear "the voices" while they are busy working…Remember one important point: in pursuing your passion, the actual doing is what matters, not any measure of success. A diet of constant, stimulating activity is the best prescription for our troubles."[33]

We agree wholeheartedly…and we hope you do too!

A note on hereditary brain disorders – the National Institutes of Health have identified certain brain disorders that may be hereditary – Huntingdon's, Leigh's and Menken's are a few examples. Children who are born with these diseases may increase the likelihood of another family member getting it. It is best to discuss these specific diseases with your doctor or specialist to find out about your risk factors if someone in your family has been diagnosed and to explore ways in which you can avoid being affected.

Chapter Six: Creative Thinking

If you've watched the television series 24, you must have marveled at the creativity that went into producing this show. The 9/11 incidents most likely inspired much of the story line, but what's more impressive is how the writers of the series manipulate technology to track down terrorists. That factor alone makes 24 an attention grabber.

The GPS methods and computer software and gadgets featured in the show make you wonder if it's just a question of time before our lives are ruled by technological advances that can take over our thinking one day.

Each riveting episode of 24 is an excellent example of creative minds in action.

What is Creative Thinking?

Perhaps it's better to give examples, instead of define it. Like a mirror, these examples will reflect the essence of creative thinking. How about some modern day examples?

_____J.K. Rowling – writer of the Harry Potter books

_____Burt Bacharach and Cole Porter, music composers. Their songs sold millions and dominated billboard charts for decades

_____Larry Page and Sergei Brin – Google founders

_____John Charnley – pioneer of modern hip replacement

Before you get discouraged, it does not mean that just because you're not an inventor or producer like the people above does not mean that you're not creative. Creative, after all, is a very subjective word, and is not the monopoly of artists and other people engaged in artistic and musical endeavors.

So what do creative thinkers have in common?

"…so that without the creating of music or poetry or books or buildings or something of meaning, their very breath is cut off…They must create, must pour creativity. By some strange, unknown, inward urgency they are not really alive unless they are creating." (*words of Pearl Buck, well known writer*)[34]

Note that "something of meaning" in the above quotation by Buck can mean anything – and it is the individual who decides what that something of meaning is in his life. For example, getting a closed-minded computer-allergic senior to try his hand at email by showing him ways how email can be much more efficient than manual letter-writing is an exercise in creativity. Putting headers and footers and clip art to e-books because a ghost writer believes his clients would "flip" over the finished product is another exercise in creativity. A mother who finally convinces her child to take swimming lessons by putting on a movie about graceful dolphins is also another creative act.

Ordinary mortals like you and me can be creative. People who study the mind say that there exists over 60 definitions of creativity, and it is beyond the scope of this e-book to name them all. The most basic meaning we can find is that which defines creativity (or creativeness) as a mental process that generates new and useful ideas and relationships between those ideas. Creative thinking may seem simple enough, as exhibited by the mother, the ghost writer and the email instructor cited above, but it really is a complex process.

Creative Thinking Techniques

A fundamental goal of creative thinking techniques is to stimulate the mind to come up with original ideas, and to combine two or several ideas to generate more ideas. That's the theoretical part. In the practical realm of things, it is more difficult to find ideas that will click or germinate. The process however does not stop at giving rise to ideas. These ideas have to be used to bring about a solution to a problem.

One common (and sometimes overused) technique is traditional brainstorming. Traditional brainstorming is practised by people who often work together in the same environment and no matter how much brainstorming they do, they will eventually reach a point where they can no longer come up with fresh and unique ideas. Working in the same milieu and sharing the same goals and objectives tend to make people come up with the same ideas. As one writer

put it, “In traditional brainstorming we keep coming up with the same ideas again and again because we keep providing each other with the same stimuli! [35]

We need to take the next step up by engaging in advanced brainstorming. For this to be effective, we need to apply some creative thinking techniques of which there are many. We will discuss a few of these techniques, but remember that it is not our primary concern here to determine whether the ideas that spring from these techniques are going to be of any use. Our concern here is for people to be able to come up with new ideas. Whether they are useful or not can be decided at a later date.

Creative thinking techniques vary from one proponent to the next. Any of these techniques will provide you with fresh stimuli and a different way of thinking – what some corporate moguls call “thinking out of the box.”

Scamper

Here's an illustration of creativity in action.

Probortunity. Have you ever heard this word before? Neither have we, until we stumbled upon the British web site of brainstorming as we were gathering information on creative thinking techniques. Probortunity is the merging of two words: problem + opportunity. The people who coined the word say that people usually are unable to distinguish a problem and opportunity, and since there's a negative connotation to the word "problem", they created "probortunity." It can be a challenge, question, mystery, concern, problem, puzzle, difficulty or opportunity. So it encompasses what you want to improve or change for the better.

"Scamper" as a creative thinking technique, rests on the principle of probortunity and you unravel this technique by taking each letter of the word that has a corresponding action: "s" for substitute; "c" for combine; "a" for adapt; "m" for modify; "p" for put to other purposes; "e" for eliminate; and "r" for reverse/re-arrange. In a nutshell, the scamper technique involves looking at a problem – a probortunity - and then thinking of ways to substitute part of the product or service to arrive at something more efficient. The next step is to combine parts or components and see if these might be a possible solution, and then adapting, modifying, putting it to other purposes, eliminating what you don't need, and re-arranging or reversing your product or process. Instead of reproducing the entire SCAMPER diagram, we encourage you to visit the site at www.brainstorming.co.uk/tutorials/scampertutorial.html.

Random Word

This is another creative thinking technique. Random Words as a concept have been promoted and marketed by creative thinking proponents and entities; they even have software (random word generators) tools you can use. The Random Words technique stimulates your mind by creating new ideas and concepts and lies at the core of brainstorming. For people in advertising, it is an especially effective technique for coming up with fresh marketing slogans and brand names. For people who need multiple user names and passwords, Random Words can be a useful tool.

Analogies

The way we learned it in school, making an analogy is comparing a situation or product to something else. The phrase "is like" is therefore essential in this creative thinking technique. Analogies help us to think of our personal probortunity and coming up with solutions we never thought of before until we compared it to another. The first step is to think of an analogy: what does our situation (or product or service) remind us of? What other areas have situations similar to mine? Who else experiences this situation but does not possess the same expertise?

The example provided by brainstorming UK is an excellent one:[36]

Step 1 – create an analogy – running a business **is like** managing a theatre production.

Step 2 – use this analogy as a stimulus to obtain bridging ideas. One of these ideas may just turn out to be a solution to the problem.

Step 3 – take one bridging idea and complete the thought process: Running a business is like managing a theatre production. A theatre production is split into two halves. Do we therefore need to split our sales team into two groups - a pre-sales and an after-sales team?

According to Brainstorming Co UK, there are many analogies you can use to trigger your creative juices which will pave the way to solutions.

Other Creative Thinking Techniques

There are numerous techniques you can adopt to see which one works best for you or your group such as False Rules, Escape, Challenge, Random Picture, Wishful Thinking, etc. We strongly encourage you to visit www.brainstorming.co.uk/tutorials/creativethinkingcontents.html which will discuss each of these techniques with examples.

In Chapter Fifteen, we've put together worksheets containing a few creative thinking techniques that you may want to try out.

Blockers to Creative Thinking

Take it from Robert Allen (*The Mind Workout Book*, 2003). "The only way to be creative is to believe that you are creative", and this belief should set

you on the right course. Logic dictates that the more you think you're creative, the more creative you become. Always hold on to your ideas, Allen says, even those you think are bad; you'll never know when they're actually good ideas in disguise.[37]

After spending four years in university and then a few more years on their first job, people tend work their analytical thinking skills more than their creative thinking (unless they are employed in places that put emphasis on creative thinking such as publishing, advertising or the arts). Individuals who work in environments that demand analytical thinking tend to fall in a pattern where their creativity lags behind. Blockers to creative thinking occur and they may or may not be aware of them, and hence prevent the growth of new ideas.

Some blockers to creative thinking include:

1. *Fear and self-doubt* – wasn't there a saying once that said "fear is our greatest enemy?" Fear is the biggest blocker to creative thinking. We dare not voice our opinion for fear of being ridiculed or rejected, or we don't speak up because we think our ideas are corny.

2. *"There's only one correct answer"* – this stubbornness turns off the flow of creative juices. This attitude can be changed by practicing some of the creative thinking techniques mentioned earlier.
3. *Going with the status quo* – we would rather conform or stay on the beaten path so as not to disrupt the peace and spirit of the team. This is also an offshoot of blocker 1, fear. We feel safer in a sea of sameness, rather than in the field of battle.

4. *Passing on judgment too quickly* – sometimes, out of habit, we become too jaded in our views and opinions, incapable of seeing a

positive aspect or two about ideas or alternatives that are presented to us.

By being receptive to new ideas after we've applied creative thinking techniques, we train our minds to tap our hidden creativity and arrive at solutions we never thought possible. If you read the stories of cancer patients, for example, many of them have turned their disease into an opportunity to create projects that are important to them. Their cancer diagnosis put their minds on overdrive until they found an activity or a mission that fulfilled them, hence taking their minds and worries off their cancer, and instead channeling their efforts towards more meaningful endeavors.

Chapter Seven: Critical Thinking

Critical Thinking Defined

We found a definition for critical thinking by Michael Scriven and Richard Paul for their project with the National Council for Excellence in Critical Thinking Instruction:

> Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action. In its exemplary form, it is based on universal intellectual values that transcend subject matter divisions: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, and fairness.[38]

You're probably thinking, is there some way this definition could be worded differently so that it's easier to digest and understand? If indeed that was the first thought that entered your mind, congratulations – you just put your creative thinking cap on! Having discussed the creative mental process, let's now look at our critical thinking skills.

Rephrasing the definition above, we'll take some of the keywords: conceptualizing, applying, analyzing, synthesizing and evaluation. These are all verbs. The key nouns are: observation, experience, reflection, reasoning, communication. Both verbs and nouns are interspersed with modifiers: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth and fairness.

We've got all the components of the original definition. How about the following as an alternative definition?

Critical thinking is the way our mind takes in information supplied by our five senses and processes that information through analysis, application and then summarizing it so that we can come up with a clear, accurate and fair assessment of that information.

Was that easier and less doctoral? We certainly hope so.

Don't be misled. We respect the original definition. The writers probably just overlooked the fact that this definition would not be confined to an academic journal but also made available to the Internet where web writing significantly differs from thesis-like writing.

In its minimalist form therefore, critical thinking is the manner in which we deal with data that we gather from our environment (media of communications) and either use or discard that data. If we decide to use it, we need to break it down into components so that we get a clear and precise idea of how we're going to use it. That's the minimalist version.

Scriven and Paul, however, take critical thinking one notch higher: critical thinking should be **fair** and **justified**. What they mean is that the process of critical thinking is influenced by an individual's motives. When his motives are selfish, this is seen in the clever manipulation of ideas to serve one's own purpose. Hence it risks being intellectually flawed, no matter how practical or useful those ideas are.

When critical thinking is grounded on fair-mindedness, then it is often of a "higher order intellectually", according to Scriven and Paul even if people judge it to be "too idealistic."[39] They argue that we could never label someone as a critical thinker through-and-through because as human beings, we can go through certain periods of irrational or undisciplined thought. Critical thinking essentially is a question of degree and dependence on range and depth of experience, among other things.

A web master, for instance, who has just learned how to create web sites, may have set ideas on how to attract visitor traffic or how to increase ranking

with Google, Yahoo and MSN; a web master of many years' experience, on the other hand, would probably go one step further and weigh the advantage of one search engine optimization (SEO) technique over others before choosing one – and after having evaluated the client's goals and target sales. An experienced web master is also aware that no matter how sophisticated he builds a web site – whistles, bells and all – he won't be able to optimize traffic without good content; that is, well-written articles that are keyword-rich and with appropriate meta tags. This is where you distinguish the level of critical thinking that has been enriched and developed by years of actual experience.

Methods of Critical Thinking

The process of critical thinking follows a logical sequence:

Gathering information and evaluating the arguments for and against the information.

Breaking these arguments into components and then extracting implications from these arguments and their components.

Examining these statements and implications for possible contradictions.

Weighing these statements and ranking them according to importance or relevance.

Adjusting the weightings in light of new additional information.

Assessing the weights of each argument.

Acting on the information.

It's usually more effective to support principles with real-life examples. Here's one situation. Imagine that you're completing your Bachelor of Arts degree in Psychology and you've opted to do a thesis instead of a full, intense week of exams. You will be interrogated by a panel of professors. Since you've written term papers all your life and feel you've honed your research skills, you decided that doing a 200-page thesis would be the better option.

You have three facts to consider:

Fact # 1:

You have two topics in mind: one is on Freud's contradictions and the other is on Type A Personalities and how type A behavior can lead to stress-related disorders.

Fact # 2:

You received notice that three professors will be on your oral defense panel and you know them well, having taken a few classes under them during your four-year degree. Professor X is a traditionalist thinker and has a profound respect for Freud; Professor Y is a young professor who graduated from an Ivy League university and has a string of accomplishments to his name: captain of the basketball team at the university, marathon runner with two gold medals, coaches his daughter's lacrosse team, and you've heard him once or twice scoff at Freudian principles. He's obviously a type A personality and at the rate he's accomplishing his numerous life goals, a sure candidate for chronic fatigue syndrome. Professor Z is middle-aged, middle-of-the-road and strictly a family man first, a professor second. He hosts barbecues  in his home, doesn't mind a good stick of marijuana occasionally and plays the banjo. He's the type of professor who doesn't take the "publish or perish" motto of academia too seriously; fact is, he's decided to perish rather than publish.

Fact # 3

You also learn that Professor X belongs to a secret sect of Freud disciples and that someone told you once that during a barbecue party at Professor Z's house, he once made a joke about Freud, calling his theories silly and too sex-oriented.

Based on the three facts above – you now need to decide which topic to write on. This is how we would suggest you tackle this issue, taking the methods of critical thinking into consideration; that is, gathering, breaking down into components, examining, weighing, adjusting,

assessing and acting.

√ By noting down the facts, you have already gathered the info (three professors on the panel) and broken it down into components (reputation of each professor).

√ Using the examination method, your feeling tells you that if you make an all-out effort to highlight the contradiction in Freudian thought, professor X would probably drill you and make it tough for you to defend your arguments since he has profound respect for Freud. Professor Y on the other hand who exhibits type A tendencies would ask you to supply substantial evidence and question you on your research methods. Professor Z would agree that yes, Freud probably contradicted himself more than once, and ask you a few questions for the sake of formality to make sure you wrote it yourself and not some academic paper mill. Your most difficult battle would then be with professors X & Y.

√ On the other hand, if you choose the second topic – type A personalities and their health problems - professor Y would probably challenge you the most. He may appreciate your thesis because it would enlighten him on potential health problems, or he may deride you for jumping to conclusions. He could even accuse you for using too much anecdotal evidence instead of actual case experiments supported by scientific data. Professors X and Z would take a neutral stance since neither is a type A personality nor are they particularly interested in this area of psychology.

√ Weighing your facts and arguments, you are now beginning to see that this might be your best approach: discard the Freud thesis (you don't want to be remembered for being anti-Freudian and hated by an entire cult) and take the type-A personality thesis idea instead. Professor Y may challenge you all he wants but you're 100% comfortable that your knowledge and research will see you through.

√ In assessing the weightings, you will make it a point to emphasize the advantages of type A personalities, highlight their potential for accomplishment, and toning down on your criticism. You will also emphasize that NOT all type-A personalities end up with an illness later in life and put more stress on their productivity. This way, professor Y should not feel that his personality is under attack, and therefore would take a more lenient stance when he questions you.

√ Acting – you've carefully studied the situation, so you now send off a note to the academic office that you will be writing your thesis on type-A personalities.

Important! Critical thinking proponents assert that critical thinking does not begin and end at certain points; it is a continuum of thought that has to be changed or adjusted in light of new information obtained. You must not assume that by applying the methods of critical thinking, you will reach the right answers and conclusions. The information that is gathered may be false, biased or only half-true. And just because we call our mind to task when we engage in critical thinking, it does not mean that our emotions do not get involved. They do. In some situations, our emotions can affect the nature of the information we obtain to help us make a decision.

Paradigms of Critical Thinking

An article on Wikipedia explains that critical thinking may be looked at within many frameworks or paradigms. This paradigm is a four-tiered one.[40]

Dual reasoning – in this thinking mode, the paradigm at work is usually in terms of black/white; wrong/right; good/bad; either/or. The example of the graduating student who had to write a thesis had to choose between Freud or type-A personalities, and the advantages and disadvantages of one topic versus the other.

Multiplicity – our thinking leads us to believe that different people may hold views that are different from ours, or may look at problems from different angles. The graduating student may feel that professor X, being a Freud disciple and a member of a Freud sect may not take too kindly to her exposé of the contradictions in Freud's thinking. However, it is also possible that professor X, while a fan of Freud, may agree with her that his theories contained too many contradictions.

Relativity – "it's all relative", we hear people say. Indeed it is. Because people are different, ideas may also be different, but they are all equal. Relativity is a step up from multiplicity in that it recognizes that different people have different opinions, and that these opinions are not necessarily wrong or correct.

Relativity with commitment – this mode dictates that there may be a difference in opinion, but to enable us to validate an opinion we must have a set of criteria upon which to validate it.

There is another principle that operates in critical thinking: the simplest solution is likely the best. We've all heard the advice, "keep it simple." It is based on Occam's Razor, or the "principle of parsimony" which requires that only one assumption be made – making too many would be unnecessary.[41]

Chapter Eight: Analytical Thinking

It is tempting to think of analytical thinking as being identical to critical thinking, and yes, in a sense the distinctions are blurred. No matter how subtle that distinction is, there is a boundary line that separates critical and analytical thinking.

What is Analytical Thinking?

One writer sees it this way: critical thinking comes about when we reason out with concentration and deliberation. It is not common sense, nor is it intuition. The same writer argues that we're thinking critically when we investigate, plan and explain. All of science is based on ordered, critical thought. "When we measure, calculate and record data we are reasoning critically. When we pay our bills, we use critical reasoning."[42]

Analytical thinking, by contrast, is when we critically focus on our experience and go into the depths of our logical intuitions. Hence, when we engage in analytical thinking, we are exploring our thoughts and bringing them into the level of critical awareness. Analytical thinking, therefore, is activated and developed through constant use.

These statements do not really clarify the distinction, but it's a good start. We looked for another definition of analytical thinking, this time something that undergraduates can go by since they are usually asked by professors to do an analysis of almost everything they've learned.

From a student's perspective, analytical thinking requires that students identify precisely what the central argument is in a text, comment on the logic and consistency of the arguments, comment on the manner in which the argument is presented, and then question the validity of the evidence supporting the argument(s). To elaborate, here is what one writer meant about students analyzing a document:

> "…most academics and policy-makers don't express their arguments in simple terms. The texts you will be asked to analyse will be full of complex propositions expressed in complex, sometimes convoluted, sometimes tortuous, ways. The first part of the analytical process is to

> reduce these complex and convoluted arguments into their basic constituent parts, so that you end up with a series of simple propositions."[43]

You can compare this activity to cooking – chopping in particular. You take an entire recipe and divide it into its basic components: (a) ingredients and (b) procedure. You take the ingredients and chop them into smaller pieces so that preparing the meal is easier. As for the procedure, you follow them in sequence and line up the ingredients as called for in the steps.

How Analytical Thinking Works

Before we describe how the analytical process works, bear in mind that the process pre-supposes a problem. In attempting to solve a problem, analytical thinkers follow the scientific approach.

A valuable presentation on the analytical process was presented by Matt Evans, a financial management consultant who explains the process in easy to

understand terms, although the concepts are rather sophisticated and are geared more to consultants and human resources professionals. He designs his presentation with the optimization of an organization's resources as his guiding principle.

Evans uses concepts such as root cause analysis, Pareto tools and force field analysis, among others. These are discussed in the Evans presentation entitled *A Course on Analytical Thinking* which we encourage you to view on this link: www.exinfm.com/workshop_files/Analytical%20Thinking.ppt#352,1,A Course on Analytical Thinking.

In Evans' view, analytical thinking is done by a series of five steps in this order:

Definition of the problem
Formulation of the hypothesis
Collection of the facts
Conducting the analysis
Developing the solution

For each of the steps above, there are a set of tools and techniques that are explained in detail in the presentation. In step four – conducting of the analysis - Evans says that definition is arrived at by breaking down the problem into components by applying what we know and then making use of techniques. The purpose of analyzing is to prove or disprove the hypotheses we have formulated and to understand the issues and drivers behind the problem.[44]

Evans says that it is more effective to spend time on analyzing the information rather than collecting them, because the aim is to find the "golden nuggets" that can quickly prove or disprove a hypothesis.[45] When you read the presentation, you will learn about root cause analysis techniques, one of which is the "5 whys" – wherein Evans says that it means asking, five times, why the problem exists. By asking five times, we are led to the root cause of the problem. Slide # 15 of the presentation illustrates this principle quite well.

Brainstorming is a natural part of analytical thinking but Evans cautions us about this technique. He says it works only if there is a range of ideas and solutions that can be considered. It must not be used to **test** an idea but to

generate ideas. He recommends an efficient approach that will lead to analysis: make sure you know what you are trying to solve (clearly defined problems constitute the drivers to analysis), match up the clearly defined problem with the appropriate analytical tool, and then go and collect the facts.[46]

Analytical Thinking and Positive Thinking

Would it be an erroneous statement to say that people who are positive thinkers are generally happy and emotionally balanced? No; in fact there's a lot of truth in this statement. And would it be erroneous to say as well that positive thinkers tend to tackle mental challenges better because of their well-developed and healthy brains?

This second question is tricky, although instinct tells us that yes, positive thinkers have more developed brains and therefore are more mentally equipped to deal with problems. That's our gut feeling, but that would probably be subject to serious interrogation by the scientific community.

Yet…

We are convinced that this second statement is true, especially when we read the insightful section contributed by Sandra Blakeslee to the New York Times' *The Science Times Book of the Brain* edited by Nicholas Wade (1998). Ms. Blakeslee cited some studies conducted separately in Harvard University, McGill University, Simon Fraser University and in other universities concerning the brain development of newborns.

The researchers at Simon Fraser University were trying to answer the question: can love overcome a bad beginning?[47] They were studying a Romanian child, Simona and 44 others who were in an orphanage and deprived of maternal care and love. Until she was two years old, Simona lay in a crib in the orphanage alone for up to 20 hours a day, drinking milk from cold bottles placed on top of her tiny body. She was adopted by a Canadian family and at six years old, was running, singing and talking like children her age. Not without problems, however.

According to Simona's adoptive mother, the child has temper tantrums and has difficulty following verbal instructions. When with other children, she does not easily share or wait her turn and tends to wander off with strangers.

Much study has been done on the brain and its development from birth to old age, and some researchers have turned their efforts to how a mother's touch can help shape her baby's brain. Mothers provide what Dr. Myron Hofer calls "modulators" through rocking, touching, holding, feeding and gazing at their babies. Babies know when their mothers are cold and distant even when they attend to their needs. In fact, it is in the first six months of an infant's life that he forms a mental portrait of his relationship with the mother. "These interactions", according to Dr. Hofer, "regulate the infant's neural mechanisms for behaviour and for feelings that are just beginning to develop."[48]

And since humans are more adaptable than monkeys, scientists are attempting to reverse the effect of deprivation in orphaned children. Blakeslee cited a study done by Elinor Ames of Simon Fraser University that older children – from 4 to 10 – are catching up on language skills and physical development but seem to have trouble with their social skills. Ms Ames said that when they find themselves in "stressful situations, they wrap their arms around themselves and rock in comfort."[49]

To end this chapter, and to support our "instinct" further, we wish to add that the brain's left frontal lobe is activated when human emotions such as happiness, joy and interest are felt. The right frontal lobe is associated with negative feelings. Research has demonstrated that babies of depressed mothers have decreased activity in the left frontal region and increased activity in the right region.

So let's toss the question around one more time. Are positive thinkers better in analytical thinking? What's your answer?

Chapter Nine: Aromatherapy and the Brain

Remember what we said about the brain being a huge mystery that has scientists scampering for new paths of learning about how it develops and functions, and the role it plays in shaping individuals' lives. We are fascinated but continue to wonder about how and why the few unfortunate suffer from schizophrenia or amnesia or severe depression. Different mental states and emotions trigger certain parts of the brain and to this day, new theories are still being tried and tested and challenging the old findings. The brain is really a colossal arena of study. Curiosity about it will not cease.

And now, naturopaths and herbalists and homeopaths – in fact the entire gang of complementary and alternative practitioners are touting the benefits of essentials oils for the brain. Certain herbs and oils are known to trigger memory and can help stall the ravaging effects of aging diseases like dementia and Alzheimer's.

Take sage as an example. People are saying that it is useful for improving memory, and a possible explanation can be found in an enzyme called "*acetylcholinesterase (AChE*)". This enzyme, according to one report, says that it helps break down a chemical called acetylcholine, a neuro-transmitter that Alzheimer's patients are deficient in. Researchers at the Medical Plant Research Center in British universities of Newcastle and Northumbria have shown that sage inhibits AChE. The same center discovered that in word recall tests, subjects who were given sage oil capsules fared better than the subjects who were given placebos.[50]

A professor from the Center also said that using lemon balm on patients with Alzheimer's tended to reduce their nervousness and agitation.

As early as 1652, the benefits of sage for memory and alertness of the senses were already known.

Limbic System

The brain's limbic area is where the survival instincts of humans are lodged. The limbic system affects how we sleep, feel hunger pangs, sexually behave and react to smell. Jenny Thompson's view is that this part of the brain

was sort of forgotten when modern society became more involved with the higher senses – speech development, intellect and creativity. The result? It diminished in importance. She says, however, that essential oils have the ability to re-invigorate this part of the brain. Not only can they perform this function, but can also help balance the brain's two hemispheres.[51]

A good balance in the hemispheres gives off feelings of calm and well-being. As we inhale the oils, the hemispheres move to closer symmetry, as the oils wake up our senses and enable us to relax more. This is what aromatherapy is concerned with – the union of brain, mind and body. During an aromatherapy massage relaxing messages are sent to the hypothalamus which in turn tells the body that all is well.[52]

Proof that aromatherapy boosts memory is also offered by Dr. Alan Baddeley, although he does not refer to aromatherapy directly but to the role of smell. The claim that smells are impossible to forget was supported by tests carried out by researchers and on a lighter tone, in Proust's *A Remembrance of Things Past* wherein he wrote about how smelling a Madeleine cake transported him to the neighborhood he grew up in with memories of his childhood rushing to his mind.

In one scientific experiment, individuals participating in a study were asked to smell a cotton swab that was soaked in one substance. After a thirty second interval, they were given a second swab and asked if it was the same smell as the first. The results of the test showed that the power of recall was maintained. It showed no evidence of forgetting.[53]

Chapter Ten: Visualization

What is Visualization?

Visualization can be looked at from two perspectives: technology and psychology. In technology, we have about four types of visualization that are computer-based:

Graphic visualization – using diagrams, graphs or animations to convey a message,

Scientific visualization – using computer graphics to process voluminous data obtained from the laboratory, through simulation or abstract data to serve as tools for cognition, reasoning and formulation of hypotheses,

Knowledge visualization – concerned with studies in information design and instructional message design,

Product visualization – using software to manufacture parts and product assemblies,

Music visualization – this is a feature incorporated into some media player software applications.[54]

And from the perspective of psychology, visualization is the process of creating mental images; it may also refer to the mind's spatial visualization ability.

This e-book is interested in the psychological aspect of visualization and will explore how this process works. We will limit ourselves to our visualization abilities in using imagery to alter our feelings, with the goal of transforming certain physical sensations to create a sense of well-being, mentally and physically. In other words, it is putting our brains to work so that our bodies benefit from visualization.

Visualization can be likened to the "mind-over-matter principle." In fact, in highly-stressful situations, the brain can put the body on overdrive so it is willed to go beyond the limits, enabling humans to overcome feelings of hunger, pain, or fatigue. The reverse is also do-able. We can use our minds to relax our bodies, gain mastery over our fears and keep sickness at bay.

How Visualization Works

Visualization works on the basic premise of the mind-body connection. Note that we have two forms in play: the mind produces the mental form – also known as emotion, whereas the body is the physical form and generates a physical sensation.

When we feel an emotion, it produces a certain feeling. This feeling, in turn, produces a sensation. Linda Mackenzie of healthylife.net provides an excellent example: you watch a horror film – you get frightened – you get goose bumps and your body tenses up.[55]

Remember what we said in Chapter Two when we described the structure of the brain? The left hemisphere represents our logical side while the right is where our creativity is. The logical side tends to get used more frequently than the right because we have to deal with our daily routine and think of ways to survive. When one side is utilized more than the other, it creates an imbalance. By giving in to the right side of the brain, we are making

an effort to restore that healthy balance.[56]

Visualization has sometimes been associated with meditation; some experts even say that it is an inherent component of meditation. We see visualization at work in many aspects of our lives: take the case of phobias. Psychologists have been treating people of their irrational fears for centuries. Hypnotism is a favorite method of treating these fears. People's fears range from lowly spiders to tall, imposing buildings. There's also the case of David Blaine who must have an extraordinary capacity for visualization. In one of his feats, he remained inside a block of ice for more than 60 hours, saying that he trained his mind to tolerate extreme cold, hunger and fatigue. [57] Of course, he had to be rushed to the hospital because doctors wanted to make sure that all his vital signs were still there!

For some of you who have read several articles on this subject, you may have come across the phrase "mind's eye." It is a human being's ability to visually perceive, imagine, visualize and memorize. A simple definition would be an individual's ability to "see" things with his mind.

With the advent of home computers, software developers have capitalized on this phrase and developed programs to help people improve their visualization skills. An increasing number of athletic coaches encourage their trainees who compete in professional sports to not only train their muscles and movements, but also to train their minds to dictate how these muscles should move and how movements are to be executed.

One web writer quotes UCLA tennis coach Gayle Goodwin. "The difference between a good athletic performance and an outstanding one has little to do with physical skills. A player's attitude is most important in competition, and the closer to the top you get, the more important it becomes. Everyone's game is good at that level, so it's psychological factors that make most of the difference."[58]

Practice of Visualization

When you begin to learn how to visualize, you can learn it using mental imagery or computerized imagery. Olympic coaches have used computer animation in training athletes and this tool can zoom in on a specific body movement or stroke, expose what muscles are working and what body parts can be enlarged or minimized to help the athlete visualize his performance better.

Mental Imagery

We do mental imagery when we imagine ourselves performing a specific action or movement without actually doing it. We play it – just like as a movie unfolds – in our minds. Athletics is one area in which mental imagery has been maximized. It can also be used in dance choreography, intellectual pursuits (as visualizing yourself defending your thesis in front of a panel), artistic endeavors (a painter who spends hours gazing at the ocean before he actually applies oil to his canvas), in domestic tasks (like a newly-wed back from her honeymoon and imagining the first meal at home and how it will be cooked), motivation/success coaching and in many other areas of activity or discipline. It is however used more frequently by athletic trainers and coaches who promote the thinking that winning a game is 90% mental and 10% physical. Chris Evert Lloyd and Jack Nicklaus have admitted that mental imagery has significantly improved their games.

Computerized Imagery

The advantage of using computerized imagery for your visualization exercises is that you can actually command your computer to execute movements. You train your mind to focus on these movements while your body is relaxed. You can make commands such as simulation of the environment (make it sunny, rainy, cloudy), is there a crowd or is it just you and your coach and the tennis court), the color of the surface, whether the surface is cement, grass or clay, *etc.*

You can also tell the computer to freeze a particular movement while you’re doing a serve so that you see exactly how your wrist and arm are positioned, how you’re holding and tossing the ball upwards and where your torso, legs and head are turned to.

If you prefer to use computerized visualization, be careful in selecting your animation program. Cy Tymony says they are priced from $50.00 to

$1,000.00. He says choose one with the “tweening” feature as it creates smooth and true-to-life motion. It also goes by the name of polymorphic between-frame fill-in, and it allows the computer to produce all the frames that make a complex animation. Check for scanning and importing capabilities as well so you can use drawings or diagrams from other programs or scan pictures from other sources. [59]

We have provided worksheets for you to practice some visualization skills in Chapter 15, worksheets 10 and 11.

Chapter Eleven: Meditation

In her book, *An Alchemy of Mind* (2004), Diane Ackerman argues that all forms of meditation are merely ways by which we pay close attention. If you entice the brain to pay attention, she says, the noise around us suddenly stops and we begin the journey into our inner selves. She teaches writing courses and once lamented that her students had submitted poorly written work that lacked texture. She wondered why the **feel** of being alive was not apparent in their compositions. They were not even twenty five years old. "How could life already have bored them?" she wondered.

What is Meditation?

We think we know what it is, but when asked for a definition, it eludes us, doesn't it? When we hear the word "meditation", the image that we immediately have is of a religious teacher (or one of his followers) dressed in flowing garb, sitting in a lotus position quietly atop a mountain or hill with his palms raised upwards, his eyes closed.

Instead of defining meditation, we should think about what it is NOT, and dispel some of the myths associated with meditation.

Meditation is **NOT**:

> …merely focusing or concentrating – meditation does not mean isolating an object or situation and thinking only about that object or situation. Meditation includes everything, enabling our mind to expand. Meditating is simply <u>being aware</u> but not of anything in particular.

…relaxation – although relaxation is often the outcome of meditation, an individual can relax without meditating. A warm bath, watching a movie or reading a book can help people relax. Meditation experts will say that meditation is an active activity that goes beyond the thought process; relaxation uses the thought process.

…hypnosis – there is a preliminary need to concentrate on an object and the person under hypnosis transitions into a semi-conscious trance. Meditation implies awareness of the here-and-now and to be conscious at all times throughout the meditation.

Imagine what your day looks like: early in the morning, you are forced out of bed with an alarm. If you're a mother with young children, you tend to their needs until they're ready for the school bus. You get ready for work. You wiggle your way in and out of traffic and make it to the office. While at work, all your five senses are bombarded by the people you interact with, the tools and machines to carry out your work and the situations that require your attention.

You go through rush hour traffic one more time at the end of the day, tend to the children again, prepare the meal, help with homework, perform the usual household chores.

In other words, we're engaged in a constant adrenalin-provoking mode, frequently unaware of how much mental activity we experience in any given day – our brains absorbing the full dramatics and screenplay of human existence.

For those who have made meditation part of their lives, they find that meditation allows these dramatics to settle down into a more coherent routine, allowing us to regain peace, tranquility and inner harmony. In a nutshell, then, meditation gives us the awareness of our selves being renewed.

Meditation and Stress Reduction

Uptight – harried – shell shocked – fatigue of the highest order. Pooh, you say. After all, this is the millennium. Who in his right mind can afford to relax anyway?

The mind operates like a power tool that's built with an enviable degree of sturdiness. The best tools in the market with a reputation for durability and designed with brawn and muscle do break down at some point – or overheat – or need refurbishing. The power tool then becomes less of a power tool because of the stress and pounding it is subject too. Even laptops designed and fabricated by the giant manufacturers and deserving excellent consumer ratings also have a shelf life – give these computers 3-7 years and they begin to act erratically with a slower processing capability.

Why should the brain and mind be any different?

Dr. Khalsa cites one of his conversations with Dr. Herbert Benson, the pioneer of stress management. Dr. Benson said that "the normal state of the mind is not uptight. It's relaxed, creative, intuitive, vibrant and intelligent. It's almost magical. I call the fully relaxed mind the magical mind."[60]

Meditation is one of the proven ways for individuals to achieve the magical mind that Dr. Benson speaks of. Dr. Khalsa adds that for our cognitive functions to be at their optimal state, the mind should be trained to relax. He encourages people to meditate. It triggers the relaxation response of humans by not only helping them recover from illness but also for healthy individuals to further enhance their cognitive abilities.

The mind and spirit have the power to heal.

Skeptics will probably chuckle at that last statement, but years of study on meditation have shown that the space between our thoughts, according to Dr. Khalsa, is where spirit-directed healing emanates from.

Any meditation style or technique will do, because the trick is to call upon the relaxation response. If one particular meditation style will do that, then adopt that style for yourself. The saying "whatever works best for you" which is often recommended by fitness and sports gurus also applies to meditation.

The relaxation response is created when the "thinkers" located in the neo-cortex "commands" the amygdala and hippocampus in the limbic system (center of emotion) to relax. What happens next? Dr. Khalsa says that the amygdala and hippocampus then transmit this message to the hypothalamus which begins to process the release of calming neuron-transmitters and hormones. Over a few minutes, the body transitions into a relaxed state.

Whether you engage in meditation for "mystical" reasons or simply to combat stress does not really matter. Meditation for stress reduction is encouraged and is definitely a valid exercise. You lower cortisol levels, slow down your metabolism and decrease your oxygen consumption.

Slowed metabolism for example, is what is called the *hypometabolic* state, also produced when we sleep. When our bodies reach the hypometabolic state, we consume less oxygen by about 8%. In meditation, this consumption rate drops by 10 to 20%, according to Khalsa. When oxygen consumption decreases, this means that our bodies have reached the stage of deep relaxation. Blood lactate levels also go down, which is another benefit we derive from meditation. Lactate is produced by our muscles and tends to generate feelings of anxiety.

Meditation has other benefits: it decreases heart, blood pressure and respiration rates. It was also discovered that meditation increases melatonin, the sleep hormone. All of these benefits we receive when we meditate can only have positive results on our health and to the longevity of our brain. The great news, according to Dr. Khalsa, is that researchers discovered that meditating creates a positive influence on three biological factors of aging: blood pressure, hearing ability and vision of close objects. Moreover, people who have meditated for five consecutive years were about five years younger than their chronological age.[61]

Numerous studies on meditation have revealed only positive results. We are not aware of any negative consequences from meditation in whatever form or technique.

Meditation Techniques

In Chapter Fifteen containing the Training Guide and Worksheets, we provided a few techniques that you can try out. We also encourage you to

purchase books on meditation that are generous with exercises, or consult web sites that also provide techniques, from simple to advanced ones.

If you wish to graduate into higher forms of meditation, there are books and web sites that can lead you in the right direction.

Chapter Twelve: Image Streaming

Image Streaming

Dr. Win Winger developed the concept of image streaming which is explained in depth in his Project Renaissance on www.winwenger.com.

Image streaming focuses on the individual's ability to obtain answers to questions, enhance his awareness and increase his intelligence quotient. We don't think he would go as far as guarantee you a reserved seat in the Mensa Society or in the ten other high IQ societies like Prometheus, Tops and the Giga. Dr. Wenger makes no such claims; his mission is to help us sharpen our awareness and thinking abilities, by experiencing a marked improvement in the way we reason out and describe objects around us. Nor does he promise that we would develop into another Einstein or Socrates, although he refers to these two great thinkers frequently in his discussions.

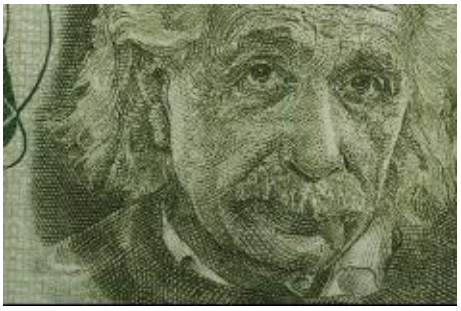
Dr. Wenger does say, however, that we should engage in image streaming and use the 10/10 test.

> "If, after at least 10 minutes per day of Image-Streaming for at least ten days, you don't find your life positively and miraculously transformed, then ignore everything we've said and do something else instead. But if you do find Socratic and other miracles happening in your life, please do continue the practice of Image-Streaming: no matter how good things become, they can become even better for you! — Fair test?"[62]

Theory of Image Streaming

The key phrase here is "visual image." We may tend to think of image streaming as echoing that of visualization. Our reading of Dr. Wenger's theory, however, does lead us to think that while it may include visualization elements, image streaming goes beyond that. In fact the original intention was to refine visualization skills, but people have reported experienced a higher degree of creativity and intelligence.

The images we see in our daily life carry with them essential ideas and insights from those ideas. The concept of day dreaming is a vital component of Dr. Wenger's theory, pointing out that Einstein's theory of relativity came about as a result of his day dreaming.



By verbalizing these images that come within our vision and consciousness and describing them aloud, these images become sharper and clearer in our mind. The mere act of observing produces what Wenger calls a feedback mechanism that results in producing more imagery.

The role of image streaming is to form a connection between a person's verbal and thinking abilities, therefore increasing his intelligence. How this is achieved is not yet clear. The evidence at best is anecdotal.

While Wenger's goal is not to transform us into a great thinker deserving of the Nobel, he does describe image streaming as a process that combines the Einstein method of day dreaming and the Socratic method of repeated questioning. These two methods make it possible for individuals to acquire more mental imagery skills that bond our visual and thinking capacities together.

Image Streaming: Procedure

Detailed instructions on how to image stream are available on Dr.

Wenger's web site, www.winwenger.com; we will cover the highlights of the procedure here.

The idea of talking to ourselves may seem funny, but the idea is to think aloud; more specifically, describe aloud what we see. Wenger suggests talking to a hand-held tape recorder or using a dictation machine. What's even better, he says, is to engage a friend or family member to listen to you either live or by phone. The important point here, we believe, is to get this friend to buy in the idea, so he does not end up trying to suppress a giggle every now and then (tall order).

1. Look at a particular object and focus on it. Study it carefully and then start describing aloud what your five senses are telling you. You have to come up with a rich description with texture and detail. At first it may seem "forced" or "exaggerated". Don't let this bother you. Continue describing what you see. Notice that more details will come to you. The more you describe, the more data will stream into your consciousness. These images gradually become fuller in texture and more "picturesque", producing almost symbolic or metaphoric elements.

2. Say it begins to rain hard. You can hear the raindrops crash against your window pane, and they get stronger as the wind picks up velocity, making the rain really loud and persistent. Instead of saying, "this is rain" or "the rain is falling hard", you describe it using all five senses. You can say, this rain smells so good, it's washing off the dust and grime from the window sill. The sounds of the rain drops are similar to that of Niagara Falls (Canadian side). The pounding reminds me of bongo drums that follow the rhythm of music coming from nearby. I see large stubborn drops of water falling on the ground, nourishing the oak trees and flower bushes outside in the garden…continue with this thought pattern.

3. As you're describing the details, describe them as rapidly as you can. Wenger says describing it quicker will tell you whether something else is worth mentioning. Go ahead and let the images flow through. Do you feel that your oral description is bringing other images into focus?

4. Try doing this with your eyes closed. It can be done, Wenger says, because your "inner visual circuits" don't get distracted and other details appear at their fullest. *Keep your eyes closed so you see more freely*.

And by the way, that isn't a contradiction in terms!

Give each image streaming session 10 to 20 minutes daily. Accord importance even to the most trivial of images and describe them in such a way that you're looking at something too magnificent to behold. If you commit to do this consistently 10 to 20 minutes at a time, you will gradually acquire the basic skills you need to make visual thinking work for you, and you begin to enjoy the other benefits of improved intellectual performance and creativity, Wenger explains.

Note: it may happen that your initial attempts will not produce mental pictures. Wenger offers a series of 24 back-up procedures on his web site to get you on your feet. If you use them and you start getting a picture in your mind – no matter how small or transient – "describe the dickens out of it" he says. As you warm up, pictures will start streaming in and more will come. If you don't experience any problem getting images when you start, then don't use these 24 back up procedures. They would only slow you down in your image streaming practice. The idea is to go ahead and start experiencing. These back-up procedures would only be useful for people who have a complete mental blank or if you're planning to teach it.

The objective of image streaming techniques is that when your description is relayed to a tape recorder or computer or another live being, re-reading them would enhance your understanding of what you've just described and would s-t-r-e-t-c-h your imagination to new dimensions. Your job is to nurture the pregnant meaning from what you've visually captured.

As you surf on Dr. Wenger's web site, you will see that he has written other articles on personal development and growth and exploring scientific discovery, technical invention and innovation, with image-streaming as his guiding principle.

Dr. Win wants you to win with streamin'!

Yon stream, whose sources run

Turned by a pebble's edge,
Is Athabasca, rolling toward the sun
Through the cleft mountain-ledge…

(*Oliver Wendell Holmes from his poem,*
"The Two Streams")

Chapter Thirteen: Speed Reading

We've almost forgotten about our speed reading courses in grade school. How agonizing those periods were!

We were in sixth or seventh grade then and remember how the nuns set about sending out letters to all parents asking if they could contribute an amount of money so that our small school could invest in a reading program that would guarantee better student performance by increasing reading and comprehension skills. Once they received the funds, they ordered the entire course and each reading level – if our memory serves us right – were color-coded. We don't remember why we got assigned to the blue level but it was certainly a few levels lower than the most superior. We recall being "stuck" for a long time in blue, and no amount of speed reading could make us graduate into the next higher color.

Now that we're thinking of it, the speed reading courses consisted of essays and stories printed in two sided folding pamphlets coated in sturdy plastic. The nuns figured that students would be sweating it out during a session, getting their hands all clammy, a few beads of perspiration dribbling down from their foreheads into the pamphlets. They certainly couldn't keep ordering new batches of reading material after they got soiled.

The plastic coating therefore was a clever idea…

The better part of our story, however, was that someone suggested conducting the speed reading courses at 1:30 in the afternoon. Note that where we come from, 1:30 in the afternoon in a hot tropical island in Asia is just about the hour that 2/3 of the country's inhabitants are hunkering down for a siesta after a heavy lunch. It's the kind of heat that makes an afternoon nap mandatory. Needless to say, to accommodate the speed reading course, the school had to abolish the afternoon nap, without as much consulting the students.

We have another interesting story – this time about Evelyn Woods, the founder of speed reading.

Philosophy of Evelyn Wood

The developers of the Evelyn Wood Reading Dynamics course makes it clear: speed reading is a discovery and not an invention. It has been used for centuries. President Theodore Roosevelt could read two to three books a day while he was president.

When Ms. Wood submitted her 80-page term paper to her professor at the University of Utah, she was intrigued that he had read the entire paper, graded it, and made comments in only ten minutes. She found out that his reading speed was 2,500 words a minute and she wondered if she could train herself to do the same. Right after that session, she embarked on a speed reading research project which lasted two years. Her first students were all types of people from different backgrounds and professions, teenagers to 80-year olds.

The subjects could read 1,500 to 6,000 words per minute and through the tests, she learned that the fastest readers did not read words individually but could read clusters of words and if called for, chunks of paragraphs. They could gauge the central message and main themes of the message with no problem.

Ms. Wood began teaching herself the same methods and was soon reading thousands of words a minute. The University of Utah tested those methods, and was first launched in Washington, DC. It spread to other parts of the United States and to Australia (1968). It is now used around the world.

Why Some People Read Slowly

The Evelyn Wood Reading Dynamics course states that some people read slowly because it goes back to the initial years when they were first taught to read. In the classrooms, students are asked to read aloud so that the teacher can make sure that they pronounce the words correctly and understand the key ideas of the material.

People often complain about not being able to concentrate or understand what they were reading. The lack of concentration and comprehension are attributed to slow reading skills. People who are speed readers have a higher degree of concentration and comprehension. This is explained by the fact that their reading pace keeps up with their thinking pace.

Reading words aloud tended to slow down your speed because you had to read and then hear what you were reading. If you remember, the reading out aloud sessions stopped somewhere in grade school or high school and from that

point on, students started reading silently. By reading to yourself, you could read faster because there was no need to hear the word in your mind. By seeing it only, you can read much faster. Note that the average person reads 200-400 words per minute. By doubling or tripling that speed, imagine how much more and how much faster you can gobble up your favorite books…and comics, if you will.

Remember Win Wenger and his image streaming concept? It jibes with what Evelyn Wood once said after she finished reading a book on the rain forest of Brazil. Notice the imagery she describes:

> *"It was, oh, so wonderful. I had no direct awareness of reading, but I could see the trees, smell the warm fragrances of the forest, feel the touch of the vines and leaves against my skin, hear those magnificent bird melodies. Reading this new way enables me to project myself into the experience, not just read about it."*[63]

Evelyn Wood Reading Course

The Evelyn Wood Reading Dynamics course is now on its 35 year – a long time since it was first taught in the University of Sydney, Australia.

People who are interested in obtaining more information must log on to the web site at **www.evelynwood.com.au**. The course description and FAQs are well explained. The course welcomes people aged 9 to 90, but the recommendation is that younger students at least have a high school education. It also reminds readers that it is not a remedial course, but one that is designed to improve reading and comprehension skills.

Graduates of the course see their reading speeds increase 4 to 10 times faster than when they first started. The course is taught over three days with four sessions per day. The course does not use machines.

The twelve lessons cover "how-to's" such as:

using your hand as a pacer
improving concentration
studying
reading newspapers and magazines
reading journals and technical papers
stabilizing for greater speed and concentration
taking lecture notes
preparing for exams
recalling what you've read
reading without sounding words
reading in groups of words
reading the classics and conceptual books

Recent Developments in Speed Reading

Our research reveals that numerous courses have sprung up since 1968, the year of the Evelyn Wood Reading Dynamics Course. The way we see it, the most striking development is the software development aspect. We're not aware if the plastic-coated pamphlets which we were familiar with decades ago are still in use.

As to be expected from innovation, the new products and services that are being marketed today are most likely offshoots of the original concept so it should not come as a surprise that some of these newer courses were designed using the original ideas of Evelyn Wood.

We'll mention three new speed reading techniques that have come into the market:

Stretch Speed Reading Program

The aim of this program, like that of the Evelyn Wood one, is to improve reading speed and comprehension. It relies on the old school practice of using flash cards which covers a more extensive vocabulary and introduces more than one word at a time. Up to 100 words can be flashed at any given time, depending on your skill level. It is a less ambitious program than that of the Evelyn Wood Speed Reading course in that it does not really believe in the speed of 1,200 words per minute, but is open to any student who can prove them wrong.

Stretch is a software program and some users say it is an enjoyable learning experience and is also addictive. The program keeps a record of your progress based on the number of words, flash duration, and punctuation skills. Improvements of 50-100% have been recorded.

Information on the Stretch program is available on **www.fieldcraft.biz/software/speedreading/1-what.shtml?bookmark**.

Harris Institute of Speed Reading (Canadian)

This is a one-day course. Its premise is to read faster, but not too fast. It incorporates the basic speeding principles of picking up key words instead of individual words. The course can be taught to students who are learning a second language or have problems like dyslexia and other learning disabilities. It rests on the four principles of learning: reading, adopting a good technique, trying consistently, and repetition.

"We teach a technique of better coordinating the eyes and the mind with the words, just as a golf pro teaches a good technique for coordinating the body with the golf club and the golf ball. In both cases, the techniques streamline the process, synchronize the faculties involved and maximize the performance for the effort put in."[64]

Finally, the Harris method does not necessarily encourage students to skip words, the way a musician does not compose music by skipping notes. For more information, visit **http://www.speedreading.ca/backgrnd.html**

ExecuRead

The individual who started ExecuRead, based in Charlotte, North Carolina was a student and teacher of the Evelyn Wood Speed Reading Program. Its success has been attributed to its catering mainly to executives who have to plough through 350 e-mails a day in addition to the reading material that lands on their desks from managers and subordinates. Bruce Stewart, the owner of ExecuRead said that he started his company after teaching the Evelyn Wood speed reading course in his native South Africa. Shivani Vora wrote an article in the online edition of the Wall Street Journal saying that in the beginning, Bruce Stewart's business had a slow start, but when the speed reading courses regained their popularity owing to the information overload of the digital age, he started teaching employees from Visa, Smith Barney and Credit Suisse, to name a few.

For more information on ExecuRead, visit **http://www.execuread.com/.**

Chapter Fourteen: Re-thinking the Great Thinkers

In the glorious days of the Renaissance and in eras before that, there was much prestige in being classified as a great thinker. "Great thinker" was almost the equivalent of genius, or at least, very close to it.

In today's circles, there are a few disadvantages – indeed even a social stigma – if you were thought of as a genius. There was connotation of bizarreness – weirdness – outcast – of a person who is considered way ahead of his time and does not think normally like most of his contemporaries. A common word to describe these "out of the box" thinkers was "visionary." Yet, there is a subtle distinction between visionary and genius.

For instance, Bill Gates has more than once been labelled a "visionary." The question is, does the windows concept and all the related software that was developed and later adopted by the entire world make him a genius? Computer geeks would probably say, "oh goodness, definitely. How can you even doubt it?" If you ask a missionary or a plumber the same question, you'd probably get a blank stare and be asked back, "who the %^&*@ is Bill Gates?

In this day of information technology and digital information processing, the word "genius" or "visionary" would be relative; it would depend entirely on what culture and from which perspective one sees it. It would be a monumental task to come up with a short list of 21 century geniuses. It was a lot easier to come up with such a list during the earlier centuries.

It could also be a question of timing.

If we were to wait another 10 or 20 years, some smart whiz may officially classify Bill Gates as a real genius after all, after the windows concept has demonstrated durability and staying power. And that's probably how thinkers like Socrates or Einstein got classified as great thinkers.

Like the favourite saying goes, "you gotta give it time."

Some thinkers have received posthumous awards for past accomplishments only because someone bothered to make the effort to penetrate

deeper into the idea espoused by a thinker, many years after his death. We think that's how it happens in majority of the cases. Sometimes, one has to die first before people realize the enormous value of your contribution. We tend to think, "it's too late", but when it comes to matters of the mind and everything related to it, it's never too late.

Our selection of the greatest thinkers for this Chapter is strictly personal and is not based on any official pronouncements by governments or private organizations. We chose these thinkers simply because we have read about them and have been awed by their way of thinking.

If we had an extraordinary spiritual or religious bent, we would not hesitate to include Jesus Christ for the influence he has wielded on Catholicism; but then in the same vein, someone would say that Mohammed or the Dalai Lama was also a great thinker because of the scope and reach of their teachings.

Any personal choice will always be subject to criticism and attack. This is why we would state outright that our choices of great thinkers are by no means the sacred truth, and came about only because of what we have read and learned. It would almost be an act of sacrilege to claim otherwise.

Albert Einstein (1879-1955)

Go ahead and laugh. We have included Einstein not because of his mathematical prowess, his preoccupation with the compass and geography, his abilities in music (the violin, most especially), and his admission into the Zurich Polytechnic Institute, then and still an institution of great learning and academic achievement. None of that formed the basis of our selection.

What impressed us most about Einstein were two things: he was a compulsive day dreamer and he failed his French language exam. Despite these qualities, however, he's still considered a great thinker. He coined the theory of relativity. All his life he engaged in what the Germans call *gedanken* – imagination games and mental experiments.[65]

Einstein devoted himself to problems of space and time. That was how his theory of relativity came into being. He sat on a grassy hill and closed his eyes and imagined himself travelling to the vast universe. Soon he realized that no matter how far he went, he was always coming back to the original point

from which he started. This led him to the conclusion that the universe must be "curved."

Another of Einstein's remarkable achievements was the "combinatory play" concept. He used visual images, rather than words, to make sense of his environment. Not that he downplayed the importance on words, but in his mind his combinatory play rested on the visual-to-verbal process; that is, the visual component came first before the verbal one.

Scholars from Princeton University led by Thomas Harvey (who had Einstein's brain removed so they could examine it) and the University of California researchers led by Dr. Marian Diamond discovered that Einstein's brain was extremely developed compared to brains of average individuals. They focused on the "glial" cells – cells that bind neurons together that create the means for electrochemical messages to be transmitted. They found that Einstein's brain had 400% more of glial cells per neuron, and were mostly found in the left parietal lobe. Dr. Diamond's interest in Einstein's brain development led her to study rats in two groups: one with stimuli and the other deprived of stimuli. She discovered that the first group of rats who were provided with many stimuli fared much better in all aspects than the second group.

The years before Einstein's death were marked with many occasions for humor, which as Gelb points out, is another manifestation of the brain's ability to make connections. This was a manifestation of Einstein's happy outlook in life. When he won the Nobel Prize in 1921, he was sought by audiences from everywhere, eager for his autograph. Gelb relates that as his fame increased, Einstein became more playful, humorous and humble. The last stanza of the following poem which he wrote to a friend is a reflection of this playfulness.[66]

"*Sometimes, surrounded by all this good cheer,*
I'm puzzled by some of the things that I hear,
And wonder, my mind for a moment not hazy,
If I and not they could really be crazy."

Charles Darwin (1809-1882)

You may have heard of the concepts of "struggle for existence" and "survival of the fittest" which were borne out of Darwin's theory of evolution. Since these theories have been discussed in high school – university for some – we will not concern ourselves with those gems of wisdom; rather we'll dwell on

Darwin's great abilities for observation and for having maintained, throughout his life, his inquisitive and innocent nature about his environment.

Many of Darwin's qualities can be imitated by society's modern thinkers – insatiable curiosity, keen observation, and a passion for the natural world. When he was only eight years old, his mother died and to compensate for the absence of a mother's love, he spent much time in solitary walks observing plants and insects. He collected shells, in addition to collecting stamps and seals.

Funny thing what happened to Darwin when he was studying at Cambridge University. He was almost not admitted into the journey of the HMS Beagle because the captain of the ship, Robert Fitzroy had the pea brain of someone who judged a person's abilities by his face. When Fitzroy met Darwin, he was so turned off by the shape of his nose and doubted whether someone with such a nose would possess sufficient amounts of energy and determination to undertake the five-year voyage. Darwin was, however, eventually admitted.[67]

The journey took them to countries such as Tahiti, New Zealand, Brazil, and Ecuador among others, and to Darwin, it was one of the most exciting periods of his life. He took copious notes of flora and fauna; to him the voyage represented the first real training and education for his mind.[68]

Darwin's greatest works include *The Origin of Species* (1859), The *Descent of Man* (1871) and *The Expression of Emotion in Man and Animals* (1872).

Gandhi (1869-1948)

Indira or Mahatma?

For now, we'll go with Mahatma. Indira Gandhi had a string of impressive accomplishments in her lifetime and was admired by world leaders and ordinary mortals – that's a fact that no one can challenge or would even dare to. What was worthy noting about Mahatma Gandhi was that he made history and inspired political revolutions without the use of violence.

Gandhi's moral philosophy inspired the thinking of Martin Luther King, Nelson Mandela and the Dalai Lama. His moral philosophy was firmly grounded on the power of one's spiritual genius to harmonize spirit, mind and body.

The great Indian leader drew inspiration by reading Tolstoy and the life of Jesus, and gradually came to believe that societies can be changed without the need for bloody uprisings. He was troubled by the occupation of India by the British and thought of peaceful means to surrender their control over the country. It was the "permission to think big" concept that encouraged him to think of peaceful ways to undermine British rule and to win followers to his flock.

Gandhi also went on a hunger strike, which some historians agree, led to the British granting India and Pakistan their independence. This form of passive resistance caught the attention of world leaders who adopted his principles and adapted them to their own particular situations.

The inspiration to change oppressed societies began when he was sent to South Africa by a London law firm. It was in South Africa where he learned of the plight of the Indians who were badly treated by the South African government. As he managed to work through their situation, getting Indians to protest against the way they were treated eventually elicited better treatment from the government. This experience brought him back to India, determined to help his countrymen fight for independence.

Gandhi's mind was focused on fearlessness, love, non-violence (peace) and vegetarianism – a small segment of the 96 ideas that would contribute to our understanding of this man's mind. In Gandhi's mind, the core of the non-violent

technique was to liquidate antagonisms but not the antagonists.[69]

Observers and critics of modern day politics are turning their attention once again to the ideas of Gandhi and wondering if they might carry equal, if not more, relevance in today's wars, including the sporadic outbreak of terrorist acts.

Socrates (470-399 BC)

We're going way back now, but an e-book on the mind and brain would not be complete without mentioning an influential Greek thinker who, through his thoughts, laid the foundation of western philosophy. Fortunately for lovers of philosophy, Plato chronicled much of Socrates' thinking because none of his original works could be found anywhere.

Plato studied under Socrates and was said to be one of his most ardent fans. For mind enthusiasts, Socrates' most outstanding contribution would probably be his dialectic method of inquiry (answering a question with another question) or what some present-day analysts call "repetitive questioning." It was simply known as the Socratic method and was applied largely to moral concepts such as Good and Justice.[70]

It would be difficult to pinpoint which constitute the theories of Socrates and which of these belong to Plato. Since Plato recorded most of his master's ideas, we would be hard pressed to credit them solely to Socrates, as Plato everyone knows, was also a great thinker in his own right.

The foundation of the Socratic method of thinking is the elimination of contradictory hypotheses, which can only be achieved if an individual poses a series of questions about his own thinking – what is aptly called "questioning your own set of thinking." By eliminating hypotheses, one does arrive at better hypotheses (process of elimination?). Socrates said that the "highest form of human excellence was to question oneself and others."[71]

Socrates lived at a time when his teachings were viewed by the Athenian Empire, then threatened by external forces, as corrupting the youth of Athens. He was judged and sentenced, eventually given the choice of leaving the country or dying by poison.

Not seeing any integrity of fleeing one's own country, Socrates chose to die by poison.

Will Durant (1885-1981)

Will Durant is a personal favorite since he was influential in cultivating our fondness for philosophy while in school. We're sure that millions of others have benefited from the teachings of Durant, in whole or in part, for even if his focus was on the story of civilization, he also spoke about love, human relations, happiness and the power of books and learning.

A pious Catholic, educated and bred in Catholic schools in the United States and son of a devout French Canadian who had hopes that her son would become part of the clergy, Will Durant was extremely spiritual in word and deed that his teachers did not doubt he would become a priest. But as he was preparing to enter the priesthood, he was suddenly awakened by the tenets of socialism and did not feel that being cloistered in a seminary would help him stretch his thinking beyond the limits of reason and logic. He was especially intrigued by Spinoza's *Ethics Geometrically Demonstrated*, but by memorizing it word for word, he began to see the absurdity of the man's way of thinking.

Durant moved to New York – much to the chagrin of his parents – and was deep in the teachings of a libertarian education. He taught at the Ferrer Modern School, an experiment in libertarian education. He was taken under the wing of Alden Freeman, who invited Durant to travel Europe so he could broaden his perspectives.

It was during the birth of his daughter Ethel that Durant began to shed off some of his original ideas.

> *But when Ethel came, I saw how some mysterious impulse, far outreaching the categories of physics, lifted her up, inch-by-inch and effort by effort, on the ladder of life. I felt more keenly than before the need of a philosophy that would do justice to the infinite vitality of*

nature. In the inexhaustible activity of the atom, in the endless resourcefulness of plants, in the teeming fertility of animals, in the hunger and movement of infants, in the laughter and play of children, in the love and devotion of youth, in the restless ambition of fathers and the lifelong sacrifice of mothers, in the undiscourageable researches of scientists and the sufferings of genius, in the crucifixion of prophets and the martyrdom of saints -- in all things I saw the passion of life for growth and greatness, the drama of everlasting creation. I came to think of myself, not as a dance and chaos of molecules, but as a brief and minute portion of that majestic process…"[72]

Skeptics of the 21 century may think that philosophy has been put on the back burner. That would be a serious error on our part.

Philosophy is not dead.

We have become embroiled in scientific thinking and processes, forgetting that all science begins from somewhere. Philosophy is the starting point – random thoughts, loose connections, shaky conclusions – but these eventually lead to order after a systematic approach or questioning. Science springs up, when that order has finally been defined.

Philosophy, therefore, is very much alove. Everything begins with a shred of thought, an ounce of an idea, a slice of thinking and a sprinkling of reasoning. Science takes over when the time is ripe.

As Durant says, "every science begins as philosophy and ends as art: it arises in hypothesis and flows into achievement. Philosophy is a hypothetical interpretation of the unknown (as in metaphysics), or of the inexactly known (as in ethics or political philosophy). It is the front trench in the siege of truth. Science is the captured territory, and behind it are those secure regions in which knowledge and art build our imperfect and marvelous world. Philosophy seems to stand still, perplexed, but only because she leaves the fruits of victory to her daughters the sciences, and herself passes on, divinely discontent, to the uncertain and unexplored.[73]

Chapter Fifteen: Training Guide and Worksheets

It's time we applied some of the thoughts and ideas that this e-book has dealt with. We will do some exercises that hopefully will give you a flavor of how your brain and mind can be trained so that mental and cognitive functions are improved. Start with the training guide and then work through the exercises.

> **Warning!** If you have been diagnosed with a brain or nervous disorder, or a learning disability, do not do any of the exercises proposed in this e-book without first consulting your physician. Moreover, these exercises have not been through the usual and required "peer review" and hence do NOT carry any guarantees of enhanced brain function. Ninety-nine percent of the exercises offered here have been patterned after the exercises that we have come across as recommended by references used for this e-book. In some instances, the exercises have been copied in their entirety (and are properly acknowledged and cited), in other instances, they have been formulated or patterned after some exercises from experts.

Training Guide

Bear in mind that this training guide and the worksheets that follow do not constitute iron-clad guarantees of improved mental performance. Only recognized experts can offer some form of guarantee and effectiveness. Our sole aim is to show you how theory and application can be combined to achieve an increased awareness of the brain-mind connection. Chapters one to fourteen are, at best, theory. This chapter applies some of those theories.

Note: if you recall, we have also provided some exercises in Chapter Three. Please incorporate them into your worksheet routine.

Read these steps first before doing the worksheets. These steps serve as your training guide.

1. This is the most important advice we can give: **have fun**! Remember that you are not preparing for the SAT or the GMAT or a bar exam. Given that

we can't guarantee higher IQ scores but only improved performance, you might as well have fun doing them and see how far your mind will take you. Who knows, you may learn something about your way of thinking that will open your eyes to newer vistas. Learning must not be arduous path but an enjoyable experience. Relax as you do these exercises. You're not being asked to perform a Fermat mathematical equation!

2. For the sake of consistency, do these exercises daily, if possible. Five days a week is ideal. Like fitness exercises, they are effective only if done frequently and regularly, as they will help you develop the habits of concentration and comprehension better. A little effort, rather than none yields positive results. Don't start all gung-ho only to abandon the exercises three days later. Schedule a time of day that you can work on them: on the subway ride to school or to the office, during your lunch breaks, in the evening before going to bed.

3. Ambitious attempts may only lead to failure. Begin with the fifteen minute routines and then graduate slowly into the 30 and 45 minute sessions.

4. Fitness experts say that exercising with a friend increases your motivation and willingness to stay in an exercise program. The same is true for your mental exercises. Engage a friend or a colleague to do the exercises with you to help you time the exercise and monitor your progress.

5. In most of the exercises, you only need an extra set of pencils and scratch paper. If you prefer to do computer-generated exercises, there are exercises available on some web sites. Choose which method works best for you. The advantage of working with computer-generated exercises is that some of these programs reveal your score instantaneously and come up with progress tracking sheets.

6. Do not attempt any heroic effort by forcing yourself to work on the exercises if you are upset or angry at someone or something. Take time to let off steam, and then go back to the exercises once you have overcome whatever it is that upset you.

7. If, after doing the exercises, you find that you did not perform as well as you had hoped, do NOT be discouraged. If you have been out of school for a long time or have worked only one aspect of your brain owing to your job (e.g. your tasks required you to do more analytical thinking than creative thinking), this is normal. A friend we knew was getting ready for her master's degree after working for 10 years and when she took the GST exams as a preliminary requirement, she failed the exam. The admissions officer in charge of the department assured her that low scores such as hers were expected especially from people who have been in the work force a long time and did not work on mathematical or analytical problems. Most graduate schools put more emphasis on one's communicating skills or past achievements.

8. You are free to choose whether to concentrate on one aspect of mental exercises such as memory building for a specific period of time or do a hodge-podge of exercises. For example on day 1, you may want to do just memory exercises, on day 2, creative processes, and on day 3 analytical processes. These exercises are not intended to be cut and dried and time-oriented.

9. The worksheets contained in this e-book are by no means exhaustive. These are just a representative sample of thousands of exercises out there. We encourage you to look for supplementary exercises by visiting your local library and visiting web sites dedicated to these subjects.

10. Even after you have finished the exercises and completed your "training", turn any situation into an opportunity to challenge your mind. Hopefully, you shall become accustomed to this mode, enabling you to muster the discipline to force your mind to think and automatically gear-up for problem-solving, easy or difficult.

Enjoy the worksheets. Let's get started…go to the next page.

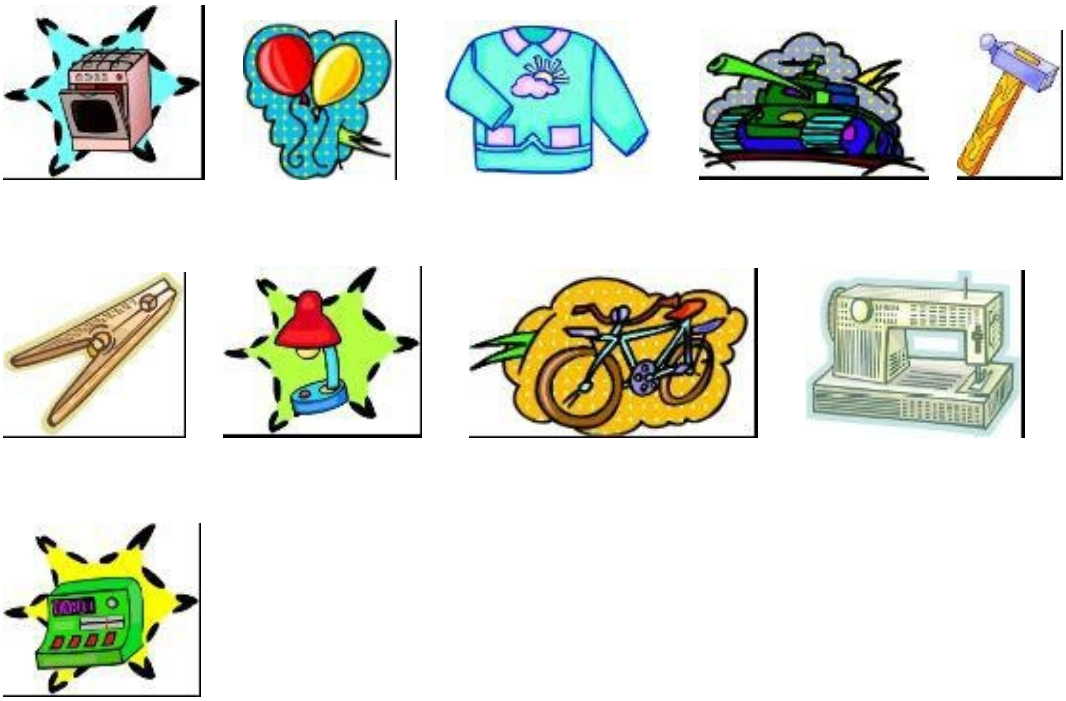
Worksheet # 1

(*Memory Building – Chapter Four*)

15-minute exercise

Here is an exercise that was designed to test your visual memory. The idea for this test was taken from Robert Allan's *Improve Your Memory* (2004) and he calls it "Kim's Game."

There are 30 objects here. Your task is to look at them for 1 minute and remember them. List them down on the sheet provided. If you remembered only a few, repeat the exercise and see how much more you remembered. Two or three attempts should last no more than 15 minutes.



List the objects you remember seeing:

1.	**2.**
3.	**4.**
5.	**6.**
7.	**8.**

9.	**10.**
11.	**12.**
13.	**14.**
15.	**16.**
17.	**18.**
19.	**20.**
21.	**22.**
23.	**24.**

25.	**26.**
27.	**28.**
29.	**30.**

Score on first try:_____

Look at the pictures again. Start over with a new list.

1.	**2.**
3.	**4.**
5.	**6.**
7.	**8.**
9.	**10.**
11.	**12.**
13.	**14.**
15.	**16.**

17.	**18.**
19.	**20.**
21.	**22.**
23.	**24.**
25.	**26.**
27.	**28.**
29.	**30.**

Number of objects on second recall:_____

You can do this exercise with any group of objects. For example, you can use a

pictorial or photography book (coffee table books are good sources of pictures) and do this exercise. As you do more and more exercises, your mind gets used to remembering more, while you make a conscious effort to retain more of what you see.

Worksheet # 2

(*Memory Building – Chapter Four*)

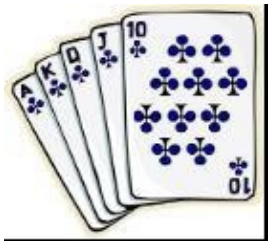
30-Minute Exercise

Do you like cards? Did you enjoy playing games like snap, gin rummy and lucky nine as a kid? This exercise was based on one of Dominic O'Brien's weekly exercises taken from his book, *How to Develop a Brilliant Memory* (2005). You take 10 cards from a deck and lay them face up before you. You have 30 seconds to memorize these 10 cards. Write them down on the sheet provided. The idea here is you're trying to remember two objects in one picture: the shape and the figure; *e.g.* queen of hearts or nine spades. In the first exercise, you only had to remember the object; this time, you are remembering 2 objects in one. Note you only have 30 seconds to memorize the cards. For the first ten cards we provided, memorize only the card on the front facing you, or the card at the top. When you have finished, take another 10 from the deck until you finish all 52 cards.

You have 30 seconds, so be sure you time yourself. Then write your answers on the sheet provided.










Write the cards here:

1._____
2._____
3._____
4._____
5._____
6._____
7._____
8._____
9._____

10._____

Take the next 10 from the deck and repeat exercise.

Worksheet # 3

(*Memory Building – Chapter Four*)

45-Minute Exercise

This time we'll test your knowledge of geography and your ability to put "aids" for each item so that you remember it better next time.

For part 1 of this exercise, put down the capital in the second column of each of the countries listed in the first column. Record your score. We'll explain part 2 when you've finished.

COUNTRY	CAPITAL
Liechtenstein	
Syria	
Yemen	
Indonesia	
Bulgaria	
Qatar	
Malta	
South Africa	
Belize	
Trinidad & Tobago	

Oman	
Hungary	
Chile	
Zimbabwe	
Iceland	
Brunei	
Venezuela	
Canada	
Scotland	
Austria	
Singapore	
Netherlands	
Czech Republic	
Malaysia	
Bolivia	
Cameroon	
Bahrain	

Albania	
Ivory Coast	
Lebanon	

Here are the answers. Jot down how many countries you got correctly on the line provided below.

COUNTRY	**CAPITAL**
Liechtenstein	Vaduz
Syria	Damascus
Yemen	Sana’a
Indonesia	Jakarta
Bulgaria	Sofia
Qatar	Doha
Malta	Valletta
South Africa	Pretoria
Belize	Belmopan
Trinidad & Tobago	Port of Spain
Oman	Muscat

Hungary	Budapest
Chile	Santiago
Zimbabwe	Harare
Iceland	Reykjavik
Brunei	Bandar Seri Begawan
Venezuela	Caracas
Canada	Ottawa
Scotland	Edinburgh
Austria	Vienna
Singapore	Singapore
Netherlands	Amsterdam
Czech Republic	Prague
Malaysia	Kuala Lumpur
Bolivia	Sucre
Cameroon	Yaoundé
Bahrain	Manama
Albania	Tirana

Ivory Coast	Yamoussoukro
Lebanon	Beirut

Number of countries you got correctly:_____

Here's part 2: Make a list of those countries whose capital you didn't know and study them carefully. Devise some sort of mnemonic aid by coming up with funny associations or word play.

For example: if you did not guess Hungary's capital – Budapest, you can do the following:
Hungary = Budapest Hungary's capital is ruled by a religious leader who was portrayed with a protruding belly = Buda (Buddha) – despite his round belly he probably fasted occasionally. I think fasting is a pest. So you have Buddha + pest = BUDAPEST!

Another example:
Iceland = Reykjavic Iceland's capital has leaves to "RAKE", but I'd rather use a javelin "JAVIK".
Hence: Rake + javelin = Reykjavik.

Remember these "little stories" in your head and pretty soon, you'll be a country-capital wizard!

Worksheet # 4

(*Creative Thinking – Chapter Six*)
15-Minute Exercise (preparation will probably take 30 minutes; but the exercise itself should take 15-30 minutes)
In Chapter Six, we described some mental exercises that can help us improve our creative abilities. One of the exercises we mentioned was "random words."

This exercise was taken from Robert Allan's *The Mind Workout Book* (2003), and is called Random Stanzas. Allan says it's guaranteed to allow you to get past the creative barrier and "reach the fertile soil of your unconscious mind."[74]

Take small pieces of paper – index cards – if you wish – and write a favorite word on each one. It doesn't matter what word you choose, just choose those that you like the sound of, or hold a special meaning for you. Start with 100 words (more is better). When you've finished filling in the pieces of paper/card with the words you chose, put them all in a hat or shoebox and toss them.

Now pick up the pieces/cards at random. Take as many as you want – start with 10 or 12. Then move them around and try to form sentences. You're most likely not going to get complete grammatical sentences, but use your imagination. If phrases are all you can manage, that's okay. How you use these phrases/sentences is entirely up to you. You could write a poem, a piece of fiction, or a cluster of words that will help you solve a problem.

Write your sentences/phrases here:

Sentence/Phrase
1:_____

Sentence/Phrase
2:_____

Sentence/Phrase
3:_____

Sentence/Phrase
4:_____

Sentence/Phrase
5:_____

Continue shuffling the pieces of paper and form new sentences until your supply of words is exhausted.

Worksheet # 5

(*Creative Thinking – Chapter Six*)

30-Minute Exercise

For this exercise, you'll need your computer. If you don't have one, your local library does.

If you use Microsoft Word a lot – in the office – in school – at home – how many of its functions do you use regularly? Did you know that Word has some functions that most people don't know about?

We'll list about 4 Word functions that most people don't use, or have not improvised on. Once you've learned how to use or improvised on it, list down your impressions and whether you enjoyed learning it. Another way would be to pick up a dummies book and do the exercises recommended in it. Word is a very versatile program, and the ones who created and designed it were very creative individuals.

1. Headers/Footers

No big deal, you say, I use them all the time for our company documents. But did you know that headers and footers can be used as banners for documents, can be shaded, and can accommodate drawings and symbols?

Someone once taught us how to do them for e-books. For awhile we could not understand why there were gaps in the edges. We tinkered with the program for two weeks until we got it down pat.

Clue: "text box" – header/footer margins – weight – layout – format text box.
Of course we can't give you step-to-step instructions. Use your creativity to figure it out yourself!

Now fill in the missing information below:

Headers & Footers
Too complicated _____

Complicated but figured it out after a few tries_____
Word did not provide all steps_____
It was a fun/enjoyable learning experience_____
What else can I do to jazz up headers and footers? _____

2. Creating an Index

A few weeks ago we were asked by a client to edit 12 chapters of a book and to create an index for each chapter. We were going to do the index manually but discovered that Word can do it. Do you know how to create an index?

Clue: ALT+SHT+X – main entry box – sub-entry.

Okay, you've just typed the last index entry. Do you know how to produce the final one?

Clue: cursor at end of document – insert – reference – index & tables
Say you changed your mind and want to add three or four more index words. How do you that? That's for you to figure out. Click on Help on Microsoft, and type index. The many possibilities for creating and editing an index are provided. Be careful though: if you edit the final index, your changes will be lost. You need to go back a few steps.

Now write your impressions:

Complicated or Easy_____
Were Microsoft instructions clear or were there steps lacking? _____
What could Microsoft do to make the creating of indices more user-friendly? _____

3. Track Changes

This is a neat Word trick that we also "stumbled" upon. Like with most word processing programs, you need to make a few mistakes in Word before getting the hang of it.

When you edit a document, and want to see what those changes are, you turn on "track changes" under "tools" in the menu section. You'll notice the letters TRK come up right below your draw bar.

When you finish editing the document, you save it for yourself. For the copy you send out, you click on "markup" to rid the document of your documents. For some who do not use this function often, they think that by clicking on

“mark up” the document arrives at the recipient’s computer all clean.

It does not. When your recipient receives the document and opens it, your track changes – the deletions, the underlining, strike outs, will still appear.

Do you know why?

Clue: “view” – “toolbars” – “reviewing”. You figure out the rest of the steps!

4. Table of Contents

We still create our table of contents manually even if we know that Word can do that task. (We just believe in wasting time).

Word actually has different styles and formats to choose from. Take any of your documents with different headings and sub-headings and let Word do the table of contents for you. If this is the first time you're doing it, go to "Help", type "table of contents" and click on the "demo." You'll be surprised at its versatility.

I did it!_____

It didn't come out right, steps are missing_____

This tutorial can be further improved. How?

_____

Worksheet # 6

(*Creative Thinking – Chapter Six*)

45-Minute Exercise

In your fiction writing courses in school, your teacher must have discussed the importance of character development. Characters add texture and color to your plot. It is a vital ingredient of any story; in fact some experts say that if you have good characters, your story will flow from them. You cannot have it the other way around – start with a good plot and then build up character. Right from the start, you need to imagine who your characters will be, what makes them unique, what their desires, sentiments and heartaches are, and what dark secrets they hold.

This exercise aims to stretch your imagination, tap your creative juices, and most importantly, learning the rudiments of character development improves your writing skills.

You can make use of "routine waiting time" by doing this exercise: at the dentist's, on the subway, in the cafeteria. Just be careful that you don't get caught staring!

You're at the dentist's office. There are five people waiting in the same lounge. Pick any one you want: an elderly lady, a girl of 10, a teen with a punk hairstyle, a man wearing a double-breasted suit who looks like a banker, *etc.*

First observe his physical features. Write them down, but don't use common, over-used words like "handsome" or "pretty" or "untidy." Stretch those adjectives by adding color.

For example, if you're struck by a person's good looks, instead of saying good-looking, you can say:
"…his bone structure suggested he was descended from a family known especially for their exceptionally enviable looks. His eyes did not reflect his soul. Not this man. Something sinister in that look, those well-tapered eyebrows reflecting a predilection for self-indulgence…" and so on.

When you've finished with the physical description, work on his psychology. Start inventing a life for him – his past, present and future. What is he hiding? Are his unsteady gazes a sign of anguish, of unfulfilled ambitions? Build him up!

Do this everyday for 2 weeks. You can do one character a day but learn to embellish each one, avoiding the use of tired, stale words. Then compare your description at the end of two weeks with the one you wrote on day one. Keep a journal so you can see how far ahead you've come!

Has your writing improved? Are you more imaginative and creative now?

Worksheet # 7

(*Critical/Analytical Thinking – Chapters 7 and 8)* We found an excellent web site that has quite a number of puzzles that you could practice with. Go to http://en.wikibooks.org/wiki/Puzzles:Logic_puzzles and pick out any one of those given. We'll include a few here for fun. There is no copyright infringement here. Wikibooks allows the public to use these puzzles for commercial or non-commercial purposes.

15-Minute Exercise

This calls for your logic skills, which as you know are a component of critical and analytical thinking.

On the fabled Island of Knights and Knaves, we meet three people, A, B, and C, one of whom is a knight, one a knave, and one a spy. The knight always tells the truth, the knave always lies, and the spy can either lie or tell the truth.

A says: "C is a knave."
B says: "A is a knight."
C says: "I am the spy."

Who is the knight, who the knave, and who the spy?

Write your answers here:

Knight is_____
Knave is_____
Spy is_____

Answer and Explanation:

A - Knight
B - Spy
C - Knave

Explanation:

B is not the knight, since if he is, then A would also be the knight.

C is not the knight, since his statement would then be a lie. Therefore A is the knight.

Hence C is the knave, and B is the spy.

(Retrieved from http://en.wikibooks.org/wiki/Puzzles:Logic_puzzles:Knights%2C_Knaves_%26_

Worksheet # 8
(*Critical/Analytical Thinking – Chapters 7 and 8)*

30-Minute Exercise

Annie, Betty, Carrie, Darla, and Eve recently found out that all of their birthdays were on the same day, though they are different ages. On their mutual birthday, they were jabbering away, flapping their gums about their recent discovery. And, lucky me, I was there. Some of the things that I overheard were...

Darla said to Betty: "I'm nine years older than Eve."
Eve said to Betty: "I'm seven years older than Annie."
Annie said to Betty: "Your age is exactly 70% greater than mine."
Betty said to Carrie: "Eve is younger than you."
Carrie said to Darla: "The difference between our ages is six years."

Carrie said to Annie: "I'm ten years older than you."
Carrie said to Annie: "Betty is younger than Darla."
Betty said to Carrie: "The difference between your age and Darla's is the same as the difference between Darla's and Eve's."
Since I knew these people -- and how old they were, I knew that they were not telling the whole truth. After thinking about it, I realized that when one of them spoke to somebody older than herself, everything she said was true, but when speaking to somebody younger, everything she said was false.

How old is each person?

Write your answers here:

Annie is _____years old.
Betty is _____years old.
Carrie is _____years old.
Darla is _____years old.
Eve is _____years old.

Annie - 30
Betty - 51
Carrie - 55
Darla - 46
Eve - 37

Answer and Explanation:
If we were to use the symbolic solving, we have:
Let the ages and names of Annie, Betty, Carrie, Darla and Eve be A, B, C, D and E.

C says to A, that $C = A + 10$. If C were younger than A, that would be lying, so C must be older than A. (But still lying.)
We have $A < C$.

C says to A, that $B < D$. As $C > A$, C is lying, so $B > D$.

We have $A < C$, $D < B$.

D says to B, that $D = E + 9$. As $D < B$, D is telling the truth, so $D > E$.

We have $A < C$, $E < D < B$, $D = E + 9$.

E says to B, that $E = A + 7$. As $E < B$, E is telling the truth, so $E > A$.

We have $A < C$, $A < E < D < B$, $D = E + 9$, $E = A + 7$.

Since $D = E + 9$ and $E = A + 7$, $D = A + 7 + 9 = A + 16$.

We have $A < C$, $A < E < D < B$, $D = E + 9 = A + 16$, $E = A + 7$.

B says to C, that $E < C$. If $B > C$ then B would be lying, so then $E > C$, and then $A < C < E < D < B$. However, C says to D, that $C = D \pm 6$; since $C < D$, this gives $C = D - 6$. However, we have $E = D - 9$, which would make $E < C$, giving a contradiction. The assumption that $B > C$ is therefore false, so $B < C$.

We have $A < E < D < B < C$, $D = E + 9 = A + 16$, $E = A + 7$.

A says to B, that $B = (17/10)A$. As $A < B$, A is telling the truth.

We have $A < E < D < B < C$, $B = (17/10)A$, $D = E + 9 = A + 16$, $E = A + 7$.

B says to C, that $|C - D| = |D - E| \rightarrow |C - D| = 9$. As $B < C$, B is telling the truth, so $C = D + 9$. As $D = A + 16$, $C = A + 16 + 9 \rightarrow C = A + 25$.

We have $A < E < D < B < C$, $B = (17/10)A$, $C = A + 25$, $D = A + 16$, $E = A + 7$.

Using $D < B < C$, we have $A + 16 < (17/10)A < A + 25 \rightarrow 16 < (7/10)A < 25 \rightarrow 160/7 < A < 250/7 \rightarrow 22 + 6/7 < A < 35 + 5/7$. Since B and A must both be whole numbers, and $B = (17/10)A \rightarrow B - A = (7/10)A$, $(7/10)A$ must be a whole number. Hence A must be divisible by 10. The only whole number fitting $22 + 6/7 < A < 35 + 5/7$ is $A = 30$.

We have $A = 30$, $B = (17/10)A$, $C = A + 25$, $D = A + 16$, $E = A + 7$.

Hence $A = 30$, $B = 51$, $C = 55$, $D = 46$, $E = 37$.

Using verbal reasoning, we have:

Carrie tells Annie she's older than her by 10 years. If Carrie is younger, she's lying, and that's impossible, so Carrie must be older than Annie, just not by 10 years.

FACT: Carrie is older than Annie (but not by 10 years).

Carrie also lies to (younger) Annie that Betty is younger than Darla.

FACT: Darla is older than Betty.

Darla tells the truth to (older) Betty that she's 9 years older than Eve.

FACT: Darla is 9 years older than Eve.

Eve tells the truth to (older) Betty that she's 7 years older than Annie.

FACT: Eve is 7 years older than Annie.

Annie tells the truth to (older) Betty that Betty's age is 70% greater than her own. For Betty's age to be a whole number, Annie's age must be a multiple of 10. Since Betty is older than Darla, and Darla is 7 + 9 = 16 years older than Annie, that means Betty has to be more than 16 years older than Annie. The lowest multiple of 7 greater than 16 is 21.

FACT: Annie is at least 30 years old (and definitely a multiple of 10).

At this point, Betty appears to be the oldest, lying lady. Let's assume that, and see if it works.

In that case, Carrie is lying to Darla that the difference in their ages is 6 years, but Betty tells the truth to (older) Carrie that the difference between Carrie's age and Darla's is the same as the difference between Darla's and Eve's, namely, 9 years. Let's test this scenario, assuming Annie's age is 30. Then we get, from youngest to oldest:
TESTING: Annie = 30, Eve = 37, Darla = 46, Betty = 51, Carrie = 55

Checking all statements and the age relations shows that this is an answer. Is this

the only answer?

If Annie's age was 40, then Betty's age would be 68, and Carrie's age would be 65, so Carrie would not be the oldest, and that would be a fatal flaw. If Annie is older than 30, Betty is older than Carrie, and Carrie is not the oldest. Hence, it must have been the only answer.

(Retrieved from http://en.wikibooks.org/wiki/Puzzles:Logic_puzzles:Lying_about_your_Age:Solu

Worksheet # 9
(*Critical/Analytical Thinking – Chapters 7 and 8)*

45-Minute Solution

Going now into real-life problems, let's try this one. It's a fun exercise, demanding some of your problem-solving (analytical) skills.

Don't rush through the solution. Pretend you really are the one with the problem.

Dmitri, who lives in Moscow, has bought a pretty necklace for his fiancee Ana, who lives in St Petersburg. He wishes to send the necklace to her via post, but due to problems in the Russian postal service, he fears the package will be opened and the necklace stolen.

There is a considerable distance between the two cities.
Both Dmitri and Ana own a number of locks, chains, and keys.
Ana does not, however, own a key to any of Dmitri's locks, and vice versa.
How can he send the necklace to her?

Write your solution here:

Compare your solution with this one:

Dmitri secures the package with a padlock and chain and sends it to Ana.

Ana attaches another padlock to the package and locks it. She then sends the package back to Dmitri.
Dmitri removes his padlock and sends the package back to Ana.
Ana removes her padlock and opens the package.

Alternative:

Dmitri sends the locked package to Ana while also sending a separate letter with the key a few days later. Or if a combination lock, Dmitri sends a letter a few days later with the code.

(Retrieved from http://en.wikibooks.org/wiki/Puzzles:Sending_a_package/Solution)

Worksheet # 10

(*Visualization – Chapter 10)*

15-Minute Exercise

We discussed visualization in Chapter Ten and mentioned the concept of mental imagery. You can use mental imagery to reinforce positive attitudes about yourself and/or your skills. Note too that mental imagery is employed by athletic coaches to encourage athletes to visualize their strokes, movements, hits, and then visualize their victory at a game or match.

Pretend you're going to be competing at a local neighborhood tennis match. You know what your strengths and weaknesses are. You will now visualize yourself playing your match.

Here's something to help you visualize:

Start visualizing:

1. What time of day is it? _____
2. A tennis court has been booked in your name for practice. Where is the tennis court located? In the city, on a mountain top, in an open field?_____
3. What's the court's surface? (clay, cement, grass, etc)_____
4. From which side will you making your first serve?
5. What's your tennis outfit like?_____
6. Describe the surroundings?_____
7. Is there a crowd watching? How many?
8. Are you scoring well and ahead of your opponent?

Now, visualize your movements:

1. Foot play is important in tennis. How should your legs and feet be positioned?
2. Tennis requires frequent bending of the knees and making your side face the court.

3. Will you be approaching the net often? At what point?
4. How will you volley the ball? How will you play at the baseline?
6. How powerful is your serve? Are you going to deliver a killer serve to distract your opponent?

Worksheet # 11

(*Visualization – Chapter 10)*

30-Minute Exercise

Remember what we said in Chapter 10 about using visualization techniques to also help relieve illness or disorders?

For example, if you suffer frequently from migraines, you could use visualization to ease your pain and shorten your stay in bed.

Here's what we propose: say these to yourself when you have a migraine. Look at the pictures next page and then begin to visualize:

If you've always been a lover of nature, picture a beautiful place. Imagine you are there.

1. You're floating very nicely on the water, facing the sun directly.
2. The subtle waves are relaxing you, your legs, arms, neck and torso are beginning to relax with the comforting feel of the water and the soft breeze coming from the horizon.
3. There is a light heat that's nestling on your forehead, melting the pain away.
4. The pain is gradually disappearing, you're at peace with yourself. You feel you're about to go on a deep slumber.
5. Your body continues to sway with the water, floating… floating…floating. No stress, no tension, just a general feeling of well-being.
6. The cheerful chirping of the birds takes the last signs of your migraine away.
7. You're no longer in pain, you're falling asleep.

8. You start to dream of other beautiful places where you might be. You concentrate on these places, know you're already there – smelling, seeing, touching – new sounds, new smells.

9. It's a place where everyone is healthy, where there are no such things as migraines.

Worksheet # 12

(*Visualization – Chapter 10)*

45-Minute Exercise

Rent a film that you've already seen – perhaps an action thriller or a horror film. This film should be something that you already watched before.

Look at your watch and begin the film. Remember to stop it after the 45 minutes have lapsed. As you are watching, try to remember the different sound effects of the film.

After the movie, sit in a quiet place and close your eyes. Try to replay the scenes of the film and the accompanying sound effects for those scenes. How many did you record?

Your answer here: _____

Watch the film again. How many sounds did you miss?

Your answer here:_____

Is there room for improvement?

Try another exercise, one that will sharpen your sense of observation. See the next worksheet.

Worksheet # 13

(Visualization – Chapter 10) Take any object from your office or house. Say you picked a vase. Look at it for 15-20 seconds.

Dominic O' Brien (*How to Develop a Brilliant Memory*, 2005) suggests you follow these steps:

1. Study the vase for 20 seconds. After the seconds are up, close your eyes and recall as much as you can about the vase. You may start with the shape, the feel (ceramic or glass or plastic), the colors, the design. Try to remember as much as you can.

2. Open your eyes and look at it one more time.

3. Add the details you have absorbed the second time and add them to your first mental image.

4. Repeat steps 2 and 3.

5. Write a complete picture of the vase taking all details into account.

Dominic O'Brien says that by repeating this pattern of observing, closing your eyes, opening them, observing again and reviewing, you get to absorb more details of the actual object.

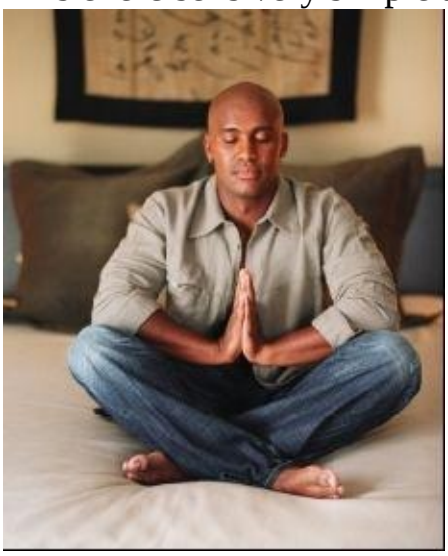
Worksheet # 14

(Meditation – Chapter 11)

15-Minute Exercise

This basic, simple meditation exercise was provided by Dr. Dharma Singh Khalsa. You don't need any special equipment or accessory. Perhaps a mat since you will be sitting on the floor. He recommends 10-20 minutes of meditation per session, at two sessions per day.

This exercise is very simple and will take only 20 minutes:



Steps:

1. Assume a comfortable sitting position and relax your muscles from the tips of your toes until the top of your head. Close your eyes. Adopt a calm attitude. Breathe slowly and deeply.

2. Turn off your internal dialogue or your day-to-day worries. Make your thoughts disappear. Don't even think of words in words. Don't make plans or remember things.

3. To keep your mind off these mundane things, repeat a sentence or phrase to yourself. This is called a mantra. Dr. Khalsa however says to choose a positive calming mantra like "peace" or "love." Phrases can include "The Lord is my Shepherd" or "I am in Harmony with Nature" – anything that makes personal sense to you. Do not choose work-related mantras like "annual reporting guide" or "profit and loss issues."

4. When thoughts seem to intrude, do not worry. This is normal. Just keep telling yourself, "relax" and repeat your mantra.

5. When your time is up, sit quietly for a minute or two and try to maintain your calm and tranquility.

Worksheet # 15

(Meditation – Chapter 11) ***30-Minute Exercise (also from Dr. Khalsa)***

This is another type of meditation that you can do in the comfort of your home. It is supposed to make you experience a continuous flow of energy, because your mind is still. The relaxation you feel is deep and relieves you of stress.

Steps:

1. Sit with your legs comfortably crossed. Keep your spine straight. Put your hands on your lap, palms up. Your right hand must touch your left hand, thumbs touching.

2. Close your eyes and imagine the tension leaving your body slowly.

3. Focus your mental energy on the point between your eyebrows at the top of your nose.

4. Silently say the mantra *Whahe Guru*, breaking it into four syllables. *Wha-he-Gu-ru*. This mantra is supposed to clear your mind.

5. Continue this for 11 minutes. Don't worry if you get distracted. Ignore the distractions and concentrate on your meditation.

6. Inhale deeply, hold your breath for 15 seconds, exhale and relax.

7. Do this twice, if you wish.

Note: There is a web site that you may want to visit www.osho.com/Main.cfm?Area=Meditation&Language=English. It offers about 5 different kinds of meditation techniques, most of them lasting an hour and taught in stages. Music and dance are incorporated into the meditation session and there are demonstrations available you can watch online. See if these types of meditation fit in with your goals and schedule.

The web site also offers weekly meditations, meditations for people on the go, and passive meditations.

Worksheet # 16

(Image Streaming – Chapter 12)

30-Minute Exercise

Recalling the teachings of Win Winger on image streaming, let's see if we can practice some of what he teaches. Before you start, remember that you need a tape recorder or a friend (either live or by phone). The trick here is to be able to relate to someone (or to some device) all that your mind sees, with your eyes closed.

The second rule is to describe what you see as fast as you can, with your eyes still closed.

Dr. Wenger uses the example of Virginia Beach. He says that instead of saying "This is Virginia Beach" or "I am in Virginia Beach" describe the scenery with as much texture, color and smells you can muster. Do this for 10 to 30 minutes.

The idea, of course, is to be physically present at the place you are describing, but for illustration purposes, let's do this anyway, to give you an idea of how to carry out the instructions. Study the photograph below.

You find yourself in a public market in China, as in the picture above. See how many details your senses can take in. Close your eyes and describe the scene as quickly as you can. Keep doing this exercise with other pictures and images, and notice how much richer and more descriptive your narration becomes. Taking the example provided, your images may be something like this.

I see strange signs above the stalls, in all kinds of bright colors. They mean something to these busy shoppers who seem preoccupied with the goods on display. Nothing seems to bother them. Plenty of stylish clothes, rubber shoes with blue, black ribbons…beach sandals that would feel great to walk in along the shores of Virginia. A man with glasses has a white bag. The white bag has some fresh fish, perhaps for dinner tonight with his family, but he's not in a rush to get home. He needs a new pair of glasses and possibly a kimono for his wife and trinkets for his young daughter. A woman in a light brown jacket is looking at sneakers, I bet she's going to take up jogging soon…her jacket is velvet inside…I love the feel of velvet. It's her favorite jacket because it's the most comfortable…

Worksheet # 17

(Image Streaming – Chapter 12)

45-Minute Exercise

We've put this under a 45-minute exercise but you can do it longer or for a shorter period of time. The goal of this exercise is to demonstrate how after-image sequences can also stimulate the mind, as suggested by Dr. Wenger. It gets your inner visual images flowing and to reinforce your mental awareness.

Steps:

1. Stare at a bright light (not too bright so as to blind you or hurt your eyes) for 30 seconds.

2. After staring at this light, or in fact after staring at any area with a dark/light contrast, close your eyes. You should have momentary after-images – leftover images on the retina at the back of the eye. You may see something – a floating object of color, or maybe a dancing light. Describe that after-image in detail with as much texture as you can. Continue describing it until it fades away.

3. Dr. Wenger says that non-reinforced after-images only last in the mind for a few seconds, but those that are reinforced, like what you just did, can last anywhere from several minutes to about four hours.

4. If you didn't get any after-image, go back to the light bulb and repeat the exercise.

Note: Dr. Wenger has other exercises that you can try to develop your image streaming skills. Go to www.winwenger.com.

- END –

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