

ALPHABETICAL BRAIN™ VOCABULARY HUMANIST FAMILY BRAIN STUDY

DETAILS ABOUT YOUR WORKING MEMORY #1 May 19, 2019

WHAT IS YOUR WORKING MEMORY? AND WHY IS IT SO IMPORTANT?

The purpose of your *working memory* system is to determine what information is the most important at the moment from your *six senses* and your *many habits* in order to protect yourself from danger or to reduce pain or produce the most comfort and pleasure possible.

Your six senses include your sight, hearing, taste, touch, smell, and proprioception. Your *proprioception sense* involves neuron clusters at your joints, such as knees, shoulders, and elbows which give you your sense of spatial awareness and balance.

The source of your working memory is a function of your *prefrontal cortex (PFC)*. Your PFC consists of two clumps of neurons the size of two pennies located about one inch behind your forehead, each one at the front of both your Left Hemisphere and your Right Hemisphere.

To begin developing your *mental force (brainpower)*, you must realize that you can actually learn how to control the functions of your working memory. Your *working memory* can be thought of as being your *creative imagination*, since this function of your *prefrontal cortex* allows you to be creative at any moment you are aware of the need to be creative.

Practical creativity includes all kinds of improvisation that helps you solve personal or social problems. This awesome creative function of your **PFC** can be enhanced by learning how to improve your thinking skills and reading strategies.

By learning specific new ways of thinking and reading, you can strengthen the executive function of your prefrontal cortex, which is the source of your mind's adaptive *self-identity* and *free will*.

By opening your mind to new perceptions organized around reliable brain facts and ideas, you can strengthen your *mental force (brainpower)* as you struggle against the *massive cultural forces* that surround you and which try to manipulate your behavior and consume your vital energy. Nevertheless, the new brain knowledge can help you conquer your doubts and confidently maintain your sanity and empower your *self* to develop *new habits*.

CIRCLE OF CONSCIOUSNESS SYMBOL©

The brain information on this website emphasizes the profound connection between your *working memory* and *long-term memory* systems. These two key brain ideas are #1 and #15 on the **Circle of Consciousness Symbol©**.

You can see that #1 and #15 are *next to each other* on the circle, which indicates that they are *inextricably connected* inside your brain:

The *neuronal pathways*, which physically connect your working memory system and your long-term memory system, are in your *anterior cingulate cortex*. They carry *biochemical currents* (ionic signals/impulses) a few inches from your **prefrontal cortex** in your *cerebrum* to your *hippocampus* in your *limbic system*.

You would *not* have any *conscious self-awareness* and *not* be able to have sensible conversations with others, if your *prefrontal cortex* and *hippocampus* were *not connected* in a robust healthy way.

The victims of *Alzheimer's Disease* provide stark evidence that “**You are your memory!**”

The shockingly dreadful dilemma of the victims of Alzheimer's Disease, which is the most common and fatal form of dementia, is that the normal connection between the *prefrontal cortex* and *hippocampus* is broken. A variety of abnormalities and dysfunctions can cause the disconnect. Victims become progressively less aware of their past memories, whose triggers are located in the *hippocampus* in the *limbic system*. Then their perceptions of reality and their awareness of their own self-identities is lessened.

If the connection is severely damaged, the self-identities of victims become permanently altered, since essential self-defining memories cannot be recalled. When victims lose contact with their memories of the past, they forget the faces of their friends and family members and also forget where they are or how to speak appropriately during conversations. Then they are compelled to *confabulate* to fill the cognitive void by making up nonsensical explanations.

Since there is *no guaranteed way* of preventing Alzheimer's disease, it is imperative that you must maintain a healthy brain by sleeping adequately, eating well, doing regular physical exercise, and challenging yourself mentally to increase your cognitive reserve.

Such proactive healthy activities can reduce the risk of getting Alzheimer's or at least delay the pace of the deterioration of the brain structures and mental functions far into old age. The goal of living long and well requires that you *keep fresh blood flowing through your veins and arteries* and *keep sparks of electro-chemical ionic signals flowing throughout your connectome* (brain and nervous system).

WORKING MEMORY METAPHOR

"The relationship between working memory and long-term memory is similar to that of a librarian and a library. Like a librarian, working memory allows you to search through the 'books' of information stored in the 'library' in order to accomplish a specific task." (Book Source = **Working Memory Advantage**, 2013, page 160)

"With Alzheimer's disease, both elements are under attack: the 'librarian' struggles to search through the stacks, and the worms are eating through the 'books'. A shrinking working memory has a detrimental effect on your ability to access the 'books', to search through the 'library' and find and apply what you need." (page 160)

"And when the 'books' deteriorate, it is much harder to read what remains." (page 160)

"However, working memory is such a dynamic and adaptive function that if it remains strong, even if Alzheimer's begins to eat away at your neurons, it may in fact help to prevent you from experiencing the cognitive symptoms associated with the disease" for a long time. (page 160)

What are the secrets of making both your *working memory* and *long-term memory* more efficient?

TAKE COMMAND OF YOUR LIFE WITH THREE NEW SKILLS

The following three excellent learning techniques can improve the functioning of your *working memory* in its relationship to your *long-term memory*.

They are: (1) **Code Breakers**; (2) **Bootstrapping**; and (3) **Chunking**:

(1) *The code breakers technique of planning* can be used for improving your memorization of the 15 brain ideas emphasized on this website, if you develop a step by step plan that can then help you transfer and consolidate new brain information into your long-term memory system. For example, you can use your creative imagination to match or create associations between each of the 15 memory codes featured on this website with each of the 15 brain ideas, respectively. (page 182)

(2) *The bootstrapping technique of learning* involves the process of combining or binding verbal information (text) with visual information (brain diagrams) by using both your working memory and your long-term memory systems together. This technique can help you consolidate brain information such as the brain names and definitions and memory codes. Eventually, the details about each brain idea can be retained and retrieved at will. (page 183)

(3) *The chunking technique of memorization* involves a method of breaking down complex information, such as the description of your brain's many amazing structures and your mind's many functions, into smaller parts or ***chunks***.

The smaller chunks of the **Alphabetical Brain Vocabulary** letters can be organized and committed by your working memory to your long-term memory. Then, the "long chunks of information are stored in your long-term memory."

This facilitates the process in which "your working memory 'conductor' can prioritize and manage data more efficiently." (Book Source = **Working Memory Advantage**, 2013, page 183; See also **Appendix: Working Memory Quick Hits Manual** on pages 280-291).

NOTE: See in *context*: neurons #2, dendrites #3, axons #4, nucleus of a neuron #5, glial cells #6, synapses #7, cerebrum #11, prefrontal cortex #12, limbic system #13, and long-term memory #15.

RECOMMENDATION: You may print this pdf version and read it and edit it by adding or deleting ideas. Then, you can read your edited version of these ideas according to a *reinforcement schedule*, such as a few hours later and a few days later and then several times in the next week or two. This strategy can help you take advantage of the power of the *spaced-repetition method of memorization*. Such deep introspection can change your adaptive self-identity and increase your self-esteem (positive emotions about yourself). Remember always: **“You are your memory!”**