

# Aphasia Insights!

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“It is in this way that what is early ‘learned by heart’ becomes branded in (as it were) upon the cerebrum; so that its ‘traces’ are never lost, even though the conscious memory of it may have completely faded out.

For, when the organic modification has been once fixed in the growing brain, it becomes a part of the normal fabric, and is regularly *maintained* by nutritive substitution; so that it may endure to the end of life, like a scar of a wound.”

**James, William. The Laws of Habit. Popular Science Monthly, Vol. 30, February 1887. 1-16.**

Stroke Educator, Inc. is committed to educating the wider public about stroke and the 50 state “*Aim High for Aphasia!*” Aphasia Awareness Campaign.

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## Stroke and Aphasia Recovery: Metaphors Help Us Mend...and Learn.

By Tom Broussard, Ph.D.

A metaphor is a figure of speech that compares two different things that provide the hidden similarities between them. I had used plenty of metaphors in my life (before my stroke) but I never thought of it as a “thing.”

I knew that they provide a useful linguistic tool that helps people solve difficult problems but I didn’t know how powerful they could be.

I had my first stroke on September 26, 2011 and started my speech therapy a month later. The nurses had told me that it might take a month for my brain to “settle down,” and that was true (at least for me.) It took a month with little sleep, hazy memory, and confused thinking, but eventually my thoughts started to clear and I was aware (somewhat) of the calming effect as my brain settled down.

My speech therapy started on October 24, 2011 and within days I started my diary. I had also been walking but it wasn’t until my diary had started that I began to see the evidence (however rudimentary) of my thinking as recorded in the diary.

The doctors had told me that the brain contains about 100 billion cells (or neurons) and I had lost the function of hundreds of millions of them. Given that they were destroyed, I assumed that a certain

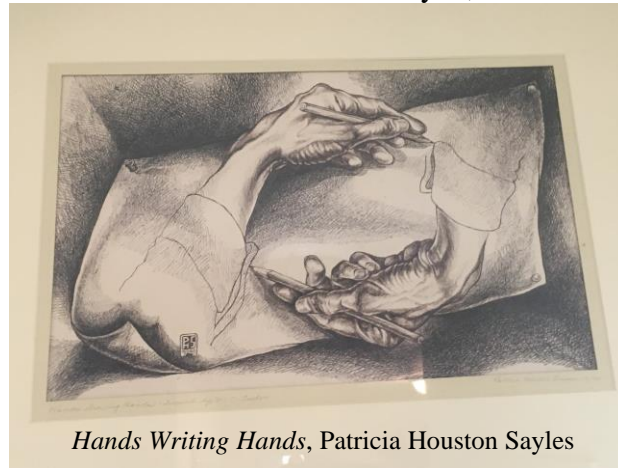
percentage of word entities were destroyed too.

Assuming that was the case, I went searching for the

words that I thought were gone.

As I walked around town, I looked at everything: signs, stores, cars, trucks, trees, and clouds, but by the end, there still weren’t any words that were *really* gone. There were still plenty of words that I couldn’t pronounce or found too difficult to say but I could tell that they were still “there”.

At that point, I realized that my first assumption was wrong. I had lost all the brain matter but the damage to my language wasn’t the



*Hands Writing Hands*, Patricia Houston Sayles

loss of an equivalent number of words. The damage was the accumulation of the destroyed neural pieces scattered across the many and redundant networks that collectively shouldered the work of my language. The words were (neurologically) faint but still perceptual.

As I rethought my approach to my language problems, a shipbuilding metaphor surfaced. I had several jobs at Bath Iron Works, a shipyard in Bath, Maine but the one I liked most was Director of the Mechanical Engineering & Design Department. I enjoyed watching teams of draftsmen working at their drafting boards creating drawings (it was just the beginning of using CAD so there were few computers) to build every facet of a ship.

A ship starts with raw steel that becomes small pieces and parts that are built up into sub-assemblies, assemblies, larger assemblies, and finally components and units that become the ship.

My language was built (and subsequently repaired) in much the same way. When words appeared “lost” they weren’t really lost as much as a small portion of a huge learning field (trillions of synapses) were destroyed, and that is why pieces of one’s language are damaged but not completely destroyed (depending on severity).

Fortunately, the remaining neurons still have the ability to grow *new* neural (brain) matter (dendrites and synapses) that then take on the language function (that were

damaged) and start the process of rebuilding the learning field again. Persistent, repetitive language activities (including metaphors) induce plasticity and convert thoughts and cognitive stimulus into neural matter.

Metaphors offer additional healing power and neurological benefits by inducing brain activation (plasticity) that increases with the linguistic complexity of the sentence (or thought).

As a result, metaphors provide and use more mental resources in order to grasp and then understand the learning from the metaphor.

Metaphors exercise brain power by: 1) creating more cognitive stimulus (thought and cognitive activities), 2) generating new learning and 3) providing the resultant neurological effects (and *feeling* the effects) of working through the problem.

Metaphors add to the cognitive stimulus that subsequently add more capacity. As a result, they are better able to handle the additional cognitive load with more habitual work and less energy required over time.

Mental exercises create new mental muscles. Metaphors are designed (albeit accidentally) to *think hard* (and learn) about whatever problem you are facing including losing your language from a stroke.

Generating new learning as a result of plasticity starts with the addition of the new synapses to the learning (synaptic) field. The transmission

of all messages (or impulses) come as a result of trillions of synapses that fire; and as they fire more, they become etched into the neural networks of the nervous system.

Metaphors help us mend and learn with more “fuel” in the form of cognitive activities, more plasticity (and more neural matter) which allows us to become increasingly ready to handle *more* cognitive activities and the resultant learning as the mothership of my language sets sail again.

Signed: *The Johnny Appleseed of Aphasia Awareness, Author, Advocate, Activist*