

Aphasia Insights!

January 2020
Volume 2, Issue 01
January 30, 2020

“Those actions which appear the most insignificant, if only they are constantly repeated, will form for us in the course of weeks or months or years an enormous total which is inscribed in organic memory in the form of ineradicable habits (pg. 209).”

The Education of the Will; The Theory and Practice of Self-Culture, Jules Payot, (1914).

Jules Payot, a French educationist & friend of Santiago Ramon y Cajal, Pioneer of modern Neuroscience.

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

Stroke Educator, Inc.
541 Domenico Circle
St. Augustine, FL 32086
207-798-1449
tbroussa@comcast.net
www.strokeeducator.com

Games, Plasticity and the magic of a neural polygraph (duplicating device).

By Tom Broussard, Ph.D.

I attended the local Aphasia Conversation Group recently at the Brooks Rehab field office in St. Augustine, FL. It is a great group that has grown to over ten since it started in March 2019. The group meets every Thursday at 11:30 AM until 1:00 PM. There were six of us (people with aphasia) that day plus one speech therapist and one speech therapist intern.

We played a card game called SkipBo. I had never seen it before but it was fun and easy to use. The speech therapist intern explained the basics and we got started.

I started taking notes regarding each player’s activities. I began to think that the activities *themselves* were the active ingredients that would bring about plasticity and the subsequent neural change. I could tell that the players were all engaged in one facet or another of the game. What I didn’t know was that each and every one of those

activities provided their own contribution to the integrative action of the nervous system.

As I watched what they were doing, I could tell that others were watching others too. Some of the players *knew* the rules while others didn’t. One noticed that I was doing something (taking notes) and asked what I was doing.

I had been recording all the actions and listed over 50 brain and language activities (log attached below) that clearly were the experience-dependent activities that induced neuroplasticity.

At that point, I realized that what we were seeing was a learning machine in all its glory. We were learning on the inside while displaying our

recent learning behavior on the outside in real time.

I didn’t realize (and I don’t think that the others knew either) that we were fully engaged in a highly therapeutic activity of learning a game without knowing that the *ultimate* purpose was improving our language abilities.

We spent a lot of time talking during the game with the intention of *learning* and winning the game. We didn’t realize that there was



more learning to be had once we became aware of the four-fold purpose of the game; the *fun* of the game itself, the *activities* that came as a result of playing and learning the game, the *awareness* that the game and the activities *themselves* provide the grist for the language and learning mill, and finally *understanding* the real cause and effect consequences of the actions which at one point was *really* just a game.

It is often easy to become bored with a quiz, a test or a game, without any good reason for understanding *why* we are doing it in the first case. It isn't enough to be told that it is fun and "these games will help you get better."

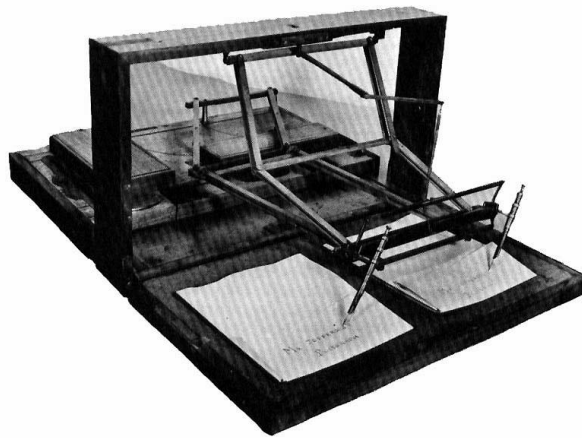
We all have high goals for our future. But the immediate goal is to come to the immediate realization that every word written, spoken and listened-to imprint a neurological copy in the brain.

I have been searching for an analogy that would help explain the physics of how people with aphasia improve their language through an assortment of games and language activities. I discovered it while visiting Monticello, President Thomas Jefferson's home in Charlottesville, VA.

President Thomas Jefferson used a letter-copying device called a polygraph (duplicating device), and copied tens of thousands of his letters. His hand moved one pen

that was duplicated by a second one which produced an amazing likeness of the original. His polygraph is located at Monticello.

Watching how the machine works, I realized that I had been looking for a (metaphorical) device that could let me understand how our language activities (including games) on the outside produce (copy, create, induce) new neural building blocks on the inside. The idea of the polygraph was the metaphorical key for understanding how plasticity works.



One of the polygraphs used by Thomas Jefferson, a portable version. Wikimedia Commons.

Intensive, consistent, and repetitive activities on the *outside* create neural copies in analogous form on the *inside*. Once that is understood, people with aphasia begin to understand the magic of plasticity and the allure of a mystical neural polygraph with copying capacity.

It is the reason why games (and many other language activities) are so beneficial for all people, whether healthy or not. It is in their nature. Whatever is written on the *outside*, simultaneously is written on the *inside*, with plasticity ink.

Log of Brain and Language activities:

- Activities, alerts, anticipation, automatics, awareness, body language, cognitive activities, color, conversations, cues, curious, decrease, dexterity, differences, dissimilar, emotion, energy, engagement, enjoyable, exercises, eye contact, feedback, fun, gestures, humor, increase, interaction, investigation, logic, matching, memory, momentum, new, novel, numbers, order, pattern, progression, relationship, searching, sequence, shape, sociable, social, start/stop, similar, stimulation, succession, talking, time, vision acuity.

Signed: *The Johnny Appleseed of Aphasia Awareness.*