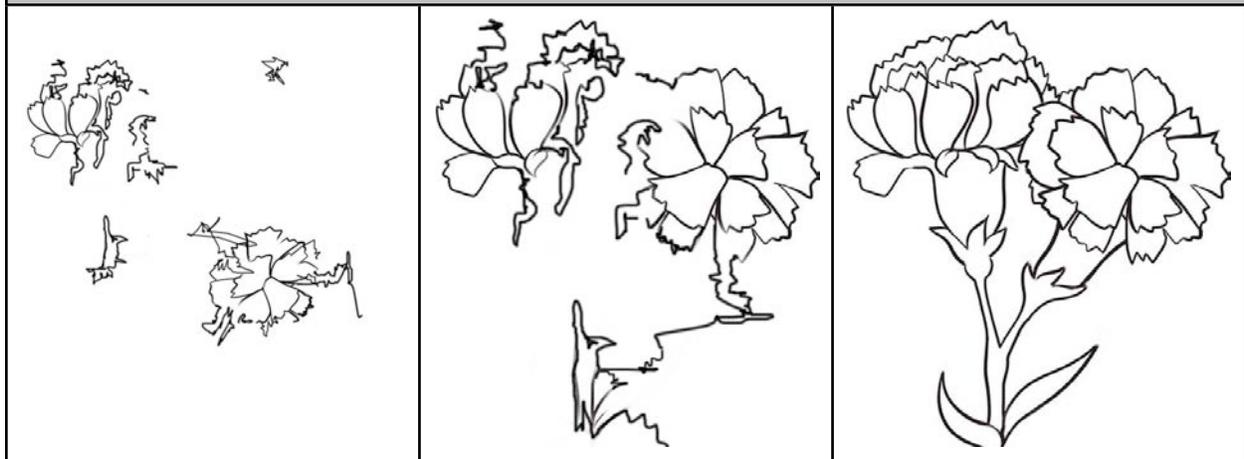


# Art as therapy: Dyslexia and neuroscience

Derek Dey - April 2014



**Above:** a schematic representation of the journey made from dyslexic fragmentation to unity in the drawing processes conducted over a year. (the lower three frames) As work and the journey of restoration progresses, fragmentation was replaced by holism's. The artist in question was Dyslexic.

In 2004 working as an art instructor in Scottsdale, AZ, a basic instruction in art was offered to everyone during their first painting before we relaxed and focused on the

question of identity and individuality; this being a prerequisite for unique and individual work. The basic introduction embraced traditional Renaissance perspective, color, composition, chiaroscuro, techniques, etc. After the introduction, the focus was on setting the individual free to develop their own style. Formal principles taught could be incorporated or dropped, but knowingly from the frame of reference supplied to all.

From the outset another issue became apparent, and that was confidence or rather the lack of it, found particularly in beginners. Whilst some students suffered from beginners' fright others revealed more deep seated issues regarding self worth and the lack of confidence rooted in messages they carried within themselves, likely from childhood onwards. The failure of the self and uncertainty in the creative processes often have a symbiotic relationship. Such problems evident in the class did not move to psychological work or counseling per se, but nurturing people through the creative processes involved both art instruction, concern for their inner world, and the acknowledgment of realities which made creativity a dangerous and difficult game for them. In part, teaching art therefore, became an integrated remedial process.

Art instruction became a form of 'group process.' Classes then seemed to fill naturally with people facing challenges of this nature. The teaching environment embraced art the internal dynamics of the students, deep empathy and acceptance. Empathies and strategies became a consistent and necessary tool in classes.

A student suffering from a bi-polar disorder who joined, found support by entering into a calm preparatory approach including laying out color in a systemic pattern on her palette before beginning work. This simple approach of establishing a calm sense of order supplied a calming time frame supportive of a transformation from hectic everyday concerns to a more reflective creative inner proposal.

A terminal cancer victim, eager to paint, nevertheless found concentration overwhelmed by her anxiety. Her capacity to draw was completely lost. We developed a technique which bypassed traditional ideas of drawing. This involved using torn paper rather than draughtsmanship with brush or pencil. We moved directly to the canvas and defined layers of stratified rock in her chosen subject - the grand canyon. Rock layers were simply defined by the torn edges of paper. This was next was laid on the canvas as a mask and a small piece of towel soaked in paint was dabbed on. The texture and application of toweled paint using the mask was laid down on the correct area and extra texture, well suited to the imaging of rock surfaces, emerged with different colors added in a repeat performance. Layers of speckled color created an effective rock imagery. It

was a calming and relatively simple procedure to follow, unfettered by the need for advanced skills and helped her through her illness by moving her through anxiety to more creative pursuits.

Sarah entered into this environment and her difficulty became apparent in her first drawing of a flower. Line was shaky and elements of the drawing were scattered in fragments across the page. She could not read the subject as a whole and we ended up with disparate elements scattered across the page. In conversation I discovered she also had great difficulty in finding her way around town. If she had a route drawn to drive to the local mall she could get there. If no route was mapped for the return she found herself lost. On a couple of occasions, being lost for a whole day she was stopped by the police for erratic driving. The problem in navigation and in drawing were both related to a general problem in mapping; the GPS system in the brain where spatial information is processed.

Sarah also became famed for her frequent outbursts of anger - or so it seemed. Others in the class were upset by this and suggested she be dropped as a student. However intuition told me otherwise. Towards the third month of instruction we had a breakthrough. Somewhere between her confessions and my insights, we discovered her anger related to frustration with her condition. It was not anger per se, but the frustration of not being able to read her world comprehensibly. This is what was literally driving her mad. On top of the work in the art class a general empathic relationship emerged: a necessary base for counseling, teaching, and general process. In psychological terms this is known as 'transference' where the helper / instructor takes on elements from the client / pupil and both embark on the healing journey together.

In trying to create gestalt like images of wholeness in her drawings we tried every trick in the book. Various materials such as charcoal, pencil, conte, pen and pencil, ink, were all used, as was a selection of subject matter which she was encouraged to make. We even turned work upside down to see if a non-rational approach to imaging would produce a different result. Progress was slow but there were incremental changes. She eventually told me her doctor had recommended art classes as a therapeutic approach. Initially her illness was not discussed but late in the year she confessed to suffering from a particular form of dyslexia, not limited to the usual language processing often defining this illness.

As the work continued, empathy deepened to full acceptance. Fears expressed at almost every stage were treated with support, reassurance and humor. The drawings

began to pull together noticeably. Disparate elements moved closer towards a complete and unified image. Sarah continually expressed the desire to draw flowers so we stuck to that single subject. She worked from flowers or pictures of flowers.

At the end of a years perseverance Sarah had gradually mastered the drawing of a flower and went on to try small groups of flowers set before her. Similarly, she mentioned her navigation around town had also improved. Uncertainty and doubt supported and transformed in the class, gave way to an internalization of more confidence in both art and life.

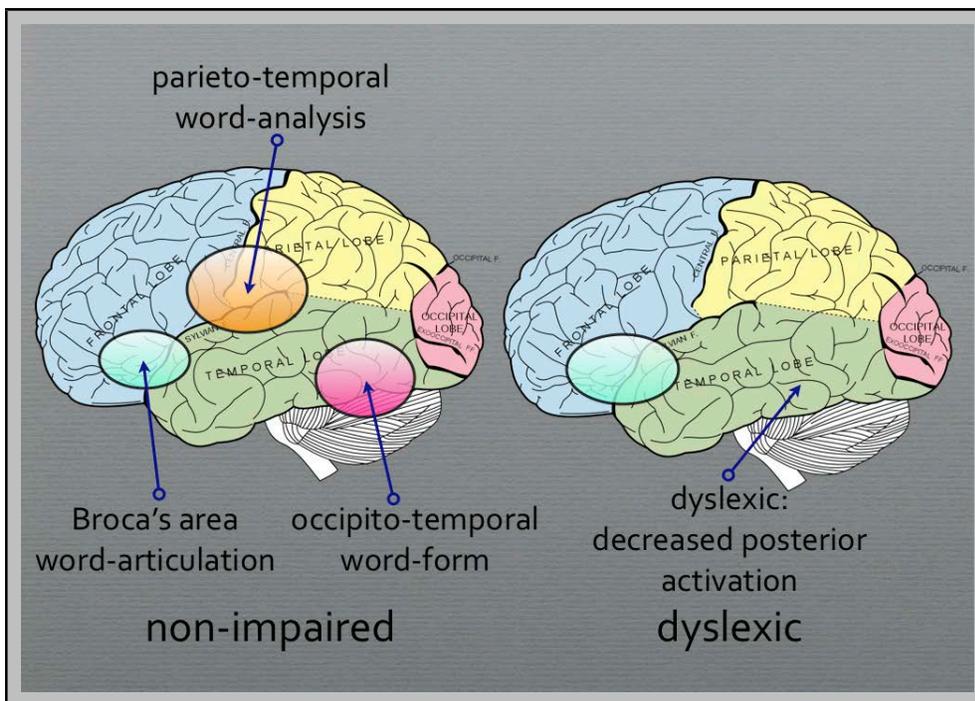
Towards the end of the year Sarah moved to color. This extra dimension was first accomplished using crayons, chalks and pastel. Painting on canvas was next suggested. This was another point of resistance but with ongoing reassurance she finally shifted gears and tried her first painting. It was basic but it worked.

Sarah mentioned a report from her doctor. Neurologically, increased networks had appeared, seemingly in relation to the increase of integrities evident in her drawings. Image resonances revealed decreased areas of activity common to dyslexic sufferers but in her case these areas had increased in size with new networks of neuronal activity emerging particularly in the posterior regions of the brain.

General studies of dyslexia reveal neuronal problems in the cerebral cortex and the thalamus, areas given to the processing of sensory information. High level processing includes sensory and motor functions, memory, attention, and language. Failures in these areas define dyslexia and also give rise to ADD issues. The thalamus lying along the processing route, feeds primary information from sense perception to processing in the cerebral cortex and frontal lobes, particularly at the Broca's area. As far back as 2001 the neuroscientist Elkhonon Golberg proposed the full neuronal tree also held to functions likened to a GPS system - the tree of neurons mimicked and mapped the world, locally and globally. This function of determining space-time, held to geometries highly pertinent to reading, drawing and art, as well as finding one's way around.

Rewiring the brain and creating new pathways dedicated to new behaviors establishes new dedicated routes in the neuron network. This is a basic supposition of neuropsychology. The benefits of neuropsychology states plasticity of the neurons is highly adaptive therefore change can be quickly established. If a new and more effective behavior can be identified and put in place of the old dysfunctional model, a new path or network of neurons comes into play, sometimes in a short timespan. New neuronal

paths related to the new behavior are then hardened or myelinated like highways. These new designated routes and behaviors emerge in tandem. Dyslexia reveals probable damage in the system which took longer to overcome. A question remains as to how thoroughly new networks can be created when physical damage is present in the neuronal system - but in Sarah's case remarkable changes were observed by moving to new behaviors in her world of drawing. Sarah became the artist she was and a person able to freely travel where she might, without any major problem. She was ecstatic with her new found freedom. Her life had changed dramatically. Sarah left for New York but when she heard I was moving she flew back and met me in tears on my last day working in Scottsdale. The experience had been profoundly emotional for both of us.



**Above left;** a non impaired simplified model of functional neuronal areas active in reading and in art.

**Right:** the decreased activation of neurons in the dyslexic model are usually located in the posterior brain system leaving the frontal area unsupported.

Attention deficit disorders, autism, and other similar diseases are all attached, in one way or another, to this basic premise of how the mind fails to read the world it lives in. Therapies involving, poetry, rhythm, and music, have been found to have similar positive effects in restoring or improving behaviors and certain related functions of the brain including its neuronal systems and networks. MRI and other systems of neuroimaging have proved vital to the area of neuropsychology where issues can be identified clearly and changes can be likewise confirmed at that level.