Cowgirl and the Neuroplastic Revolution

My foot slipped through the stirrup and for several long and breathless seconds I dangled under Playboy as he bucked and kicked wildly, attempting to get free of his up-side-down rider. The moment his hoof struck my head, my foot slipped from its tennis shoe in the stirrup and I could feel the impact of his thundering hoof-beats landing next to my ears, though I could not move nor breathe.

My first vocation was a Cowgirl. On a gusty October morning in 1965, just two months after my ninth birthday, I had set out on horseback with my dad and nineteen year old sister, to trail about 85 yearling heifers to a pasture north of our ranch house in the blustery prairie hills of eastern Montana. I had been climbing the available rungs of advancement, mastering each of a dozen ranch horses with my developing equestrian skills; the pinnacle achievement still to ride my Dad's regal horse, Esquire. But my sister had returned from college with a new high-powered, part-thoroughbred, barrel-racing sorrel, named Playboy. I must have applied my "Bestest-Buddy" status to get Dad's permission to ride Playboy on this day's mission, or maybe it was in support of Dad's taking a new bronc on his first working ride. He needed my sister to ride another horse whose presence was calming to the colt.

Windy westerly gales buffeted us, rattling the edges of my scarf tied at the chin to keep my ears warm, and all the animals were ready to run with the crisp, cool impulsivity of wind-driven giddiness. As we approached the far barbed-wire stretch of fence with our bunch of surely yearlings, Dad loped his bronc forward to pitch open a barbed-wire gate. But the balky colt's stride, as he was coaxed toward the fence, turned into bucking thunder. No big challenge for my 'Cowboy Hall of Fame' bucking horse riding father, their dispute however, spilled over to the herd.

Cattle spooked en masse with wild wind in their ears and no other thought than to run. Kicking Playboy out into a quick acceleration, I nudged him urgently to increase his speed to head-off the stampeding lead. I could feel his muscular body respond and pick up the cadence as we sprinted, thoroughbred racing style, sage-brush and gullies in stride, toward the front of the charging herd. My sister's white headscarf began a fast flutter in the breeze, whisking right off her head as she snatched it back out of the rushing wind. When Playboy glimpsed that white flash whip from behind, he abruptly cut to the side, ducking into a sudden, jolting shy, just as the lead turned back into the herd.

They told me the rest: about how the three of us rode home and, with Mom, sped over the 75 miles of serpentine gravel roads to the nearest hospital, and since all available planes were occupied with hunters, endured the 116 mile police-escorted ambulance ride to another hospital with neurosurgeons waiting. In another 20 minutes I would have been dead, they said. Awakening days later surrounded by a bustling hospital milieu, a five inch diameter chunk of the right side of my scull had been removed to accommodate brain swelling from an epidural hematoma, and I would require a metal plate the size of a horse's hoof to replace it.

No one knew how much I would be changed by this experience. But perhaps it had something to do with my aspirations to achieve a doctorate in psychology and to make my life's work in the domains of integrated healing.

For four hundred years mainstream medicine and science believed that brain anatomy was fixed. The common wisdom was that after childhood the brain changed only when it began the long process of decline; that when brain cells failed to develop properly, were injured, or died, they could not be replaced. Nor could the brain ever alter its structure and find a new way to function if part of it was damaged. Since the brain could not change, human nature, which emerges from it, seemed necessarily fixed and unalterable as well. In this way a sense that treatment for many brain problems was ineffective or even unwarranted had taken hold, and spread through our culture, even stunting our overall view of human nature.

*The belief that the brain could not change derives from three major sources: the fact that brain-damaged patients could so rarely make full recoveries; our inability to observe the **living** brain's microscopic activities (western science's brain research was advanced over the past 400 years on the study of cadavers); and the idea – dating back to the beginnings of modern science – that the brain is like a glorious machine (inherently incapable, however, of growth and change).*

In the 60's and 70's brain scientists showed that the brain changed its very structure with each different activity it preformed, perfecting its circuits so it was better suited to the task at hand. If certain "parts" failed, then other parts could take over. The machine metaphor, of the brain as an organ with specialized parts, could not fully account for changes the scientists were seeing. They began to call this fundamental brain property "neuroplasticity." These scientists persisted in slowly overturning the doctrine of the unchanging brain. They showed that children are not always stuck with the mental abilities they are born with; that the damaged brain can often reorganize itself so that when one part fails, another can substitute; that if brain cells die, they can often be replaced; that many "circuits" and even basic reflexes that we think of as hardwired are not. One of these scientists even showed that thinking, learning, and acting can turn our genes on or off, thus shaping our brain anatomy and our behavior – surely one of the most extraordinary discoveries of the last century.

The idea that the brain, at the bio-electrical level, can change its own structure and function through thought and activity is quite possibly the most important alteration in our view of the brain since we first sketched out its basic anatomy and the workings of its basic component, the neuron. The Neuroplastic Revolution has profound implications for our understanding of how love, sex, grief, relationships, learning, addictions, culture, technology, and psychotherapies change our brains. Neurofeedback is one of the leading technologies enabling our own participation in this integrated healing revolution.

I feel honored in the full circle of things to have as my occupation serving the guidance of others in increasing their neuroplasticity through brain-training in service to empathy, compassion, and resilience. Visit our website icons to learn how neurotherapy can assist you in overcoming internal obstacles to your optimal performance and in taking responsibility and personal authority for healing from the inside out: wwwaffectiveneurosciences.com