

THE POWER OF OUR MINDS DURING A PERIOD OF CHAOS/CHANGE

During these unpredictable times, we are bombarded with huge challenges in all aspects of our lives and struggle to align our way of thinking with the adversities we experience during times of uncertainty. The global landscape is experiencing the impact of volatility, uncertainty, complexity, and ambiguity first-hand with the current COVID-19 pandemic. As individuals, we all experience adversity in some form or another that make us feel out of control. However, we need to focus on the things that we can control, such as our thinking! Brain power can be very helpful in developing the focus, productivity, and overall well-being that we all need. So the question you might have is, how do we change our way of thinking, to not only survive but to thrive in these difficult times?

To answer your question, we should first start by understanding how powerful our brains can be by looking at the process of neuroplasticity. This process describes how the brain can change, recover, learn and be rewired for greatness. To get a better grip on what brain neuroplasticity is, here is a story of a woman that was born without a part of her brain called the cerebellum:

A 24 year old woman in China was admitted to hospital complaining of nausea and dizziness. A CAT scan revealed that she was missing a cerebellum. The cerebellum sits below the 2 brain hemispheres and contains 50% of the brain's brain cells (neurons)...Imagine if half of your brain cells are not there! The cerebellum helps us control our motor skills, maintain balance and manage certain aspects of our speech. It also assists the 2 hemispheres with emotion, memory and attention.

Despite not having a cerebellum, this woman was living a relatively normal life. Aside from her feelings of dizziness and mild mental impairedness, she was able to marry, have children and understand the world around her. She is not functionally disabled and she didn't have difficulty in speaking or coordinating her movements, however, she only learned to speak until she was 6 and could only walk, without difficulty, until she was 7 but yet again without the part of the brain that controls those functions, it is was a surprise that she learned to do that at all.

How did this woman learn to walk or speak without the appropriate brain areas needed to be able to do that, you might ask? Well, this is the amazing thing about our brains. The functions normally governed by the cerebellum was taken over by the cerebral cortex, the upper bigger part of the brain that we all know.

This case is a testament to brain plasticity and beautifully illustrates that we can rewire our thinking. The main function of your brain is to help you survive and adapt to your world. Brain plasticity is the ability of the human brain to compensate for changes in the body, like in this case learning to walk without crucial functions. It describes how

the brain can change, learn and even recover throughout life. Essentially neuroplasticity can be considered as learning. Your brain can change. It is adaptable like plastic.

Neuroplasticity is something that happens the whole day, always. You are now, harnessing the power of neuroplasticity. So, what does it look like? Your brain can change in three ways to support learning. The first is the electrochemical functioning of the brain, the second structural and the third functional.

Firstly, the brain functions electrochemically. Because it happens in an instant, it supports short term memory and performance improvement. This means your brain transmits electrical impulses from one brain cell to another, via chemicals that will act as either facilitators or inhibitors. Your body recognizes these chemicals as either good feelings or bad feelings. Facilitator neurotransmitters increase the speed of electrical transmission between neurons when we experience positive situations like laughing. However, inhibiting neurotransmitters slow down the speed of electrical transmission between neurons or even block it, depending on the volume of chemicals produced by the intensity of the stressful or traumatic experience.

Secondly, the brain can change to support learning by altering its structure. Because the physical structure of the brain is changing, it takes more time and therefore more supports long term memory and performance improvement. Right now, as you are reading this article and learning new facts, your brain cells are growing dendrites that are connecting with other brain cells, sending electrochemical impulses from one neuron to another. New neural pathways are formed. Every time we think in a particular way, practice a particular task, or feel a specific emotion, we strengthen this neural pathway. When these neural pathways are well reinforced, they become habits and established ways of thinking and behaving.

So when we think about something differently, learn a new task or experience a different emotion, we start forming a new neural pathway. If we reinforce that pathway more, that new way of thinking, behaving or feeling becomes second nature – an automatic response. The older neural networks become dormant if they are not continuously reinforced which validates the statement: “If you don’t use it, you lose it”.

In all of us, there is a white and black wolf. Which one wins? The one that is fed most – the pathway that is reinforced with the most intensity and repetition. Structural changes can lead to integrated networks that support learning. It can also lead to certain brain structures that change or even enlarge. People who read brail have better developed sensory processing areas in their brain than others. If you are right hand dominant, your hand motor region which is on the left side of your brain is bigger than the same area in the opposite hemisphere.

The last way the brain can change is by altering its function. With learning, whole networks of brain cells are shifting and changing. These changes can occur in isolation from each other, but mostly in concert with each other. In the case of the 24 year old woman, her brain changed functionality by the cerebral cortex replacing the functionality of the cerebellum.

What does this all mean for us in times of change?

It proves that the brain's function and structure can be altered if there is a powerful reason for change to happen. Therefore, we need to first accept the change in a positive light to release facilitating chemicals that would help us become solution thinkers instead of focussing on the negatives or stressors of a situation which will only cause us to be resistant to the changes we go through and get stuck on the problems we are facing.

Because neuroplasticity takes place every day of our life, regardless of age or health, it is safe to say that an old dog can always learn new tricks! We just need to remember that sufficient repetition and intensity can increase our efficiency and brain function for the better if we put in the hard work and don't look for quick fixes that are not sustainable. This process of rewiring your brain, by forming new connections and weakening old ones is neuroplasticity in action.

What can you do to rewire your brain?

- Asses those behaviors that are bad for your brain

- Choose to break with those behaviors and replace them with constructive alternatives. Replace the black wolf with a white wolf – negative/destructive behavior with positive/constructive alternatives

- Rewire your brain. Reinforce new neural networks. Your brain works like a movie. It has a soundtrack and visuals.
 - To reinforce your soundtrack – formulate a positive statement that reflects your desired solution/outcome. Say it.
 - To reinforce the visuals, formulate a positive/constructive vision of your alternative solution/outcome. See it.
 - To reinforce the experience/feelings – Do it.
 - Lastly – Feel it.

When you change your thoughts, you change your attitude; when you change your attitude, you change your emotions; when you change your attitude and emotions, you change your behavior; when you change your attitude, emotions and behavior, you change your performance; when you change your performance and you change your life, you then become the master of your own life and destiny despite what happens to you!