Mindset Rewiring Your Brain to See the Positive things Happening Around You By Rev. Dr. Todd F. Eklof February 21, 2021

I've been working on a video project in my spare time about NASA's Ranger program in the early 1960's. Its mission was to send rockets crashing into the moon while taking as many pictures as possible before they were destroyed. That sounds easy today, if not a rather sloppy way of going about it, but back then it was nearly impossible. Yet, it had to happen before we could ever risk a manned mission. I had never heard of this incredible piece of space history until one of our church members, Don Willingham, told me about it. Don was one of Jet Propulsion Lab's lead engineers on the project. It's such an amazing story, and one that is so little known, that I want to make sure it's preserved and told. So I interviewed Don in front of a green screen a few months ago, and have been slowly working on a short documentary about it ever since.

While doing so this past week, I accidently hit a setting in my editor that opened up an RGB waveform monitor. I had not paid much attention to this particular display before, but this time I was captivated by the red, blue, and green zigzags of light moving in perfect sync with the image of Don in another display, talking about Ranger. It was two ways of seeing the same image, the same person, both of which seemed to be speaking. In one window was the image of Don that our human perceptions would normally see when looking at a person, but in the other was a jagged human silhouette outlined by three animated colors inside a dark backdrop. I didn't have to ask myself which image was showing what Don really looks like, because I knew both of them did. Both images were true, although both were also limited in the amount of information they could translate. Each filtered the truth differently. One image was generated by filtering a short frequency of light extracted from a larger spectrum through the naked human eye, while the other was generated by filtering information from Don's electromagnetic field, something our eyes and brains don't normally do.

Imagine how different the world would look to us if our species had evolved to see the world by interpreting the electromagnetic field instead of light, or if we could envision the world as bats do, generated by echolocation—sound, instead of light. The point is, there are many ways of perceiving the world, all of which are partially true. Ours is one way of seeing it, but it is not the only way of seeing it, nor always the best way of seeing it, nor a wholly adequate way of seeing it. Knowing this, we continue to develop methods and technologies to help us transcend our human perceptual limitations to get a bigger picture of reality. Microscopes, telescopes, night vision binoculars, thermal imagery, sonar, electrocardiograms, CAT scans, x-rays, stud-finders, metal detectors, lidar, particle colliders, and waveform monitors are just a few of the prosthetic devices we have developed to get a different and more complete picture of reality.

It's important to understand this when talking about mindset, in order to properly distinguish it from what we mean by *attitude*. While it's important to have a positive

attitude in life, attitude is only one way of better coping with our perceptions of the world, that is, with the images and impressions of the world as interpreted by our brains. Unlike attitude, mindset is physical. We might better call it *brainset*, because it is neurological. As human beings, we are born with a native mindset already in place that largely predetermines how we will view the world. It is a human perspective, so we wouldn't normally grow up to see the world as a bat does, by using echolocation, nor be able to visualize electromagnetism because that's not how our visual cortex and occipital lobes work. We have a human mindset—a mind that is set to perceive the world in a specific way, according to human specialties.

Having a hardwired mindset built into our neurology should be appreciated for all it does, since it has evolved to help us best survive, while also acknowledging its limitations. If we could not imagine a reality beyond what we can perceive, we would never have learned to take pictures of the moon, nor discovered that we live in a heliocentric solar system, nor discovered penicillin, nor powered our lives with electricity, nor have begun to solve our environmental problems with wind turbines and solar panels. So much of what we know about reality, and so much of the good life we enjoy, is based upon discoveries unseen by the naked eye and imperceptible to any of our bare senses. In other words, as much as we appreciate and rely upon our ways of seeing the world, there are times we must overcome our native mindset, sometimes for our own good, and sometimes for the advancement of our entire species.

You may be familiar with the story of Daniel Kish, a man who lost his eyesight as an infant, but learned, quite on his own, to use echolocation to "see" the world. As a child, he even learned to ride a bicycle around the neighborhood with the other kids. There's a BBC story about him in which he demonstrates his ability to see without eyes by making clicking sounds, having them bounce back to him, and then describes the objects in his environment in detail. In this example, he was taken to a place he hadn't been before, correctly pointed out where the houses in the neighborhood were, then walked up to a structure and, without touching it, rightly described it as a piece of playground equipment. "I can tell it's play equipment because it's got slanting surfaces, 'click, click, click,' and it's got open surfaces and it's probably the slide." He was correct, then went on to describe the nearby shrubs and pointed out the only tall tree near the tiny playground, which stood at some distance from him. Kish's ability to visualize the world without the use of his eyes is astonishing and proves it is possible to overcome the physical limitations of our human neurology by rewiring it. It's an incredible example of neuroplasticity, the brain's ability to rewire itself, in this case bypassing the need for eyes altogether in the process of seeing. Kish has learned to see without eyes.

Here's another example: Imagine if you were suddenly thrown into an environment in which your sense of up and down, above and below, right and left, east, west, north, and south, became imperceptible and meaningless, and you felt as if you were floating about rather than grounded and connected to a firm surface. You might think you were drunk or

that you've gone mad. But such disorientation is precisely what astronauts experience their first time in the International Space Station's weightless environment, away from the planetary poles and gravitational pull of the ground that gives us our sense of direction and the ability to distinguish what's up from what's down. The newbies are astonished to observe how easily their more experienced crewmates navigate about in such an environment, even as the veterans assure them that they too will quickly adapt. And they do. In almost no time at all, the newer crewmembers float, and spin, and shift their positions from top to bottom, navigating through a relatively cramped environment, crowded with delicate wires and sensitive equipment, with the ease and grace of a species born for such maneuvering. It doesn't take long before they have overcome their native mindset by rewiring their neurology.

Having to rewire the brain to cope with blindness or weightless environments are extreme examples, but all of us have the ability, the lifelong neuroplasticity, to rewire our brains to help us to see the world in new ways, like Daniel Kish, or to gain a more expansive view of it, like the ISS astronauts. Such should be the goal of changing our own mindsets, to transcend the limits of our native perceptions. Again, as human beings, our species has evolved to perceive the world in ways that help us survive, or, at least, once helped our species survive. But there is much more to the world, to reality, and to truth than meets the eyes, and ears, and the senses of taste, smell, and touch. To continue becoming more than we are and to adapt to new and greater realities and modern challenges, it is necessary to see beyond the limits of a brain that evolved hundreds of thousands of years ago to help us survive the perils of hunting and gathering. We have moved far beyond that lifestyle and our mindsets have had to adapt and evolve with us, even if our biology has remained much the same.

Today, the exponential advancement of technology is causing things to change faster than we can keep up with, certainly faster than we can physically adapt to. It takes ages for our biology to evolve, yet only a few months for many of our technologies. Our technologies, for example, have made our lives much easier and more convenient. Instead of spending most of our time traveling short distances on foot, we need spend only short amounts of time traveling long distances in cars and airplanes. Instead of spending our spare time writing letters to only our closest friends and family, we can quickly and easily write and email or send a text to anyone. Instead of laboring to write checks, stuff envelopes, and get them to the post office before it closes, we can tie all our bills to our bank accounts and have our computers automatically take care of them for us. Yet our bodies, which have evolved to walk and remain active throughout the day, which is an essential part of our cardiovascular health, have not adapted to the sedentary life of sitting in a car or at a desk working on our devices. We must force ourselves to exercise if we want to remain somewhat healthy these days because our bodies cannot adapt quickly enough to living the sedentary lifestyle our technological advances have recently fashioned for us. If we suddenly found it necessary for our survival to have six fingers to better grapple with our environment, or a larger heart to help pump more blood through sedentary limbs, or a greater sense of smell to detect pollutants in the air, or some other dramatic physical adaptation, our species would perish because it would be impossible for us to evolve fast enough. This is so with the exception of one organ, the human brain. Like Daniel Kish, whose neurology rewired itself to allow him to see in a completely new way, or astronauts who quickly adapt to living in a weightless environment where their sense of direction is meaningless, our native mindset can quickly change its neurocircuitry whenever necessary. Think about how astonishing this is! Despite our otherwise slow to advance biology, we have a powerful piece of organic hardware in our heads that can immediately transform our mindsets to help us quickly adapt to radically different circumstances and environments.

Yet, each of us is also born with our ancient brain and its neurology still intact. We are born, that is, with an ancient mindset that we have to learn to change in order to adapt to our modern reality. Among the most formidable ancient mindsets, as you often hear me talk about, is the mindset of fear. We are neurologically wired to always be on the lookout for danger. We don't like surprises and try to protect ourselves from even being surprised. Our amygdala, which regulates the fight and flight response, is wired to our hippocampus, which regulates our emotions. So when the amygdala is active, especially when it is overactive, it can cause us to be unduly fearful of the world, remaining in an unhealthy state of hypervigilance against danger.

This is especially so when it comes to trying new things. We have a neophobic brain, which makes us overly cautious and conservative, often prohibiting us from taking advantage of our neuroplasticity by preventing us from adapting, advancing, and opening our minds to greater truths, larger realities, and to wonder and mystery. If we live as our ancestors did, always working unnecessarily to sense some hidden danger or predator in the jungles and savannahs, it manifests today has hypertension, or paranoia, or a propensity to embrace unfounded conspiracies, or to catastrophize the smallest of problems. As modern people, each of us must work during our individual lives to rewire a brain that has evolved to keep us safe by making us inherently afraid of change and of progress.

Certainty is another part of our native mindset. As you have also often heard me say, the more certain we are, the better we feel. This is because the feeling of certainty, and that's all it is, an emotion, is rewarded by a release of dopamine, a neurotransmitter that signals our nerves to feel pleasure, as a reward for doing what our native brain wants, namely, repetitive behavior. Our brains can't tell us which patterns of behavior are best for us, so it bets on the statistics. If it programs us to repeat ourselves, the repetitive behaviors that don't get us killed will be naturally selected over time, better assuring our survival long enough to pass along our genetic information to new hosts, which is all evolution cares about, survival of the

information we carry, not the carrier. So, just as our brainset makes us feel good and safe for being certain of our tried and true habits, and fearful of new ways and ideas, it also makes

us inherently conservative about change, new things, and progress. As good as this might feel, however, it is a hindrance to our growth and maturation as individuals and as a species. The father of developmental psychology, Jean Piaget, once said "Every individual instinctively, unconsciously serves its species, serves life."¹ Yet he also said there is a mindset that gets in the way of our development and the natural altruism of our species:

It is the conservative spirit which is guilty, which has arrested progress, forbidden work for world peace, maintained armies, destroyed faith and the dignity of man. Without the conservative spirit the people would not have remained in misery, they would not have been faced with an obstinate bourgeoisie, ignorant of its duties. It is the conservative spirit which is guilty because without it, woman would be equal to man, and never would the horrors of this century have withstood her. The conservative spirit killed the idea, it is the cause of war.

So these three mindsets, fear, certainty, and conservatism, are native to our species, meaning we are born with them because they are inherent in our neurology. Although they remain useful at times, we can no longer afford to let them dominate us. Dominant mindsets shape our perceptions of the world, and when we are dominated by fear, certainty, and conservatism, we perceive a frightening, small, unyielding reality.

When Jesus said, "seek and ye shall find," I doubt that he was talking about our mindsets, yet we usually do find only what we are looking for. If we are overly fearful, then we perceive a dangerous world full of enemies. If we are overly certain, then we are only able to confirm our own biases. If we are overly conservative, then we are blind to the advantages of new ideas and new ways of doing things and we, like an overly fearful, certain, and conservative society, become set in our ways, even if they are destroying us, unable to see that are habits are the real danger. Everything that does not fit our mindset or that requires us to change our repetitive behaviors and old beliefs, is either invisible to us or classified as a hoax: global warming is a hoax, COVID-19 is fake news, the election was rigged, so let's ignore them all because they contradict our limited perceptions of the world.

Yet we can also actively and easily work to rewire our native mindsets to adapt to the greater reality around us. Instead of running away with our fears, we can simply remind ourselves that our fears and worries are usually exaggerated, if not unfounded. We can also rewire our brains to feel more optimistic about the world by not depending strictly on the negative, reptilian-brain-driven news media for information, or the repetitive kinds of information AI driven algorithms predict will most grab our attention. Seek and find sources of information that are intentionally positive, like *Futureloop*, an online magazine that begins by saying, "Your mindset is the most important thing you have. Futureloop is a counter balance to the algorithmically driven content feeds negatively shaping our biological neural-nets."² Expose yourself to the world's beauty—to sunsets and sunrises, to a walk in nature, or to human art, or to upbeat or calming music. Hang out with people and become part of organizations that are optimistic. Adapt your environment with reminders, like posters and placards with sayings about all the good in the world, or about keeping a

positive mindset. The settings we place ourselves in can have a tremendous impact on our mindsets, so make your surroundings uplifting.

Seek the positive and ye shall find it. Instead of paying attention to ludicrous conspiracy theories based on randomly connecting unconnected dots, read books that provide factual information about all the good things happening, like Matt Ridley's, *The Rational Optimist*, or Peter Diamandis's, *Abundance: The World is Better than You Think*. Or Hans Rosling's, *Factfulness*. In the latter, Rosling says, "Factfulness, like a healthy diet and regular exercise, can and should become part of your daily life. Start to practice it, and you will be able to replace your overdramatic worldview with a worldview based on facts ... You will make better decisions, stay alert to real dangers and possibilities, and avoid being constantly stressed about the wrong things."³

Above all, train yourself to trust in human goodness. We have been theologically and culturally conditioned for thousands of years to disparage and mistrust human nature, and to denigrate human dignity. But when we realize that, as Piaget said, it is our nature to serve our species and to serve life, or that, as Socrates said, "no one knowingly does evil," or that, as Archbishop Oscar Romero said, "We have all been born to be good, to love one another, to understand one another,"⁴ we realize that we are not alone, that we live on a planet full of billions of people, brown and white ones, gay and straight ones, male and female ones, rich and poor ones, Muslim, and Christian, and Hindu, and Atheist ones, who are all goodhearted and care for one another. We have been trained to feel cynical about human nature, but when we take an inventory of all the good people in our lives compared to the rotten ones, we find we live in a world of mostly kind and considerate people who are selfless and want to do the right thing.

We cannot easily or quickly change our bodies to adapt to any circumstance, but we can compensate for this by readily transforming our mindsets to see the world in bigger, brighter, and truer ways than we can otherwise imagine. This power is a gift and a marvel of our existence that is too often squandered for fear of change. So be not afraid to use it to transform your life and to transform our world.

¹ Piaget, Jean, *Th Essential Piaget*, Gruber, Howard E., and Voneche, Jacque J., Eds., Jason Aoroson Inc., New York, NY, 1977, 1995, p. 29.

² <u>https://futureloop.com/landing</u>

³ Rosling, Hans, *Factfulness*, Flatiron Books, New York, NY, 2018, p. 16.

⁴ Romero, Oscar, *The Violence of Love*, Orbis Books, Maryknoll, NY, 1987, 2007, p. 65f.