

The Brains Evolution toward Mindfulness

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Abstract

In this paper, Dr. Ackerman makes a rather compelling argument for the need for psychiatrists to move beyond their fixation with neurotransmitters and take a wider-angled look at how our overall brain functions. When we do that, we see that the brain is an incredible instrument and organ of survival, if we learn how to optimize the best parts and constrain the worst ones.

Dr. Ackerman shows that as our brain evolved, our advanced brain tacked on to our more primitive brain, so that our higher nature and best self literally sits on top of our mammalian brain and worst self. He shows how the pre-frontal cortex has evolved to allow us to be aware of this set up, and to become aware that we are the only living entity that is aware we have a brain, and then beyond that is aware of wide range of thoughts, feelings and impulses that are on our mind. He shows that most of what we think and feel comes from the fight or flight area of our brain and is not only of no benefit to us, it is actually harmful to our survival. He then introduces the concept of mental toxicity the sum total of the negative thoughts and feelings we have about ourselves and then introduces Mindfulness as a form of "Mental Dialysis" to help free ourselves from this toxicity. Our well-being, our inner peace, our capacity for love, joy, and compassion all require our freedom from negatives thoughts and feelings which we can learn how to transcend, mindfully.

Keywords: *Brains Evolution; Mindfulness*

I am delighted to share my professional work, which I could not possibly be more excited about. I have been on a professional mission to integrate Mindfulness teachings into mainstream psychiatric treatment. I can say with some pride, that I have NOT spent my entire life preparing for this. But I can say, I have devoted the past 15 years immersed in this work. We have all been witnessing the role of psychiatrists become more and more constricted and limited to medication management. We have become tunnel-versioned, neurotransmitter specialists, and are overlooking our fundamental role to help our patients and others to see the big picture, to not miss the proverbial forest for the trees. I got into the field, because I found people fascinating, and have always seen my role as a psychiatrist to inspire others to become more curious about themselves, to learn to understand themselves better, and through their understandings to make changes in beneficial ways, that is: to evolve. Mindfulness teaches us how to observe both the forest and the trees. Here is an overview of what I will discuss today about Mindfulness.

1. Mindfulness, as a unique capacity, which allows us to, not only, be aware of what we are thinking and feeling, but also, which enables us to select more intelligently, which of the multitude of our thoughts and feelings we are going to latch onto, identify with, and authorize to guide our attitudes, our decisions and our behavior.
2. Mindfulness: An Evolutionary Perspective: One of the main reasons, from an evolutionary perspective, that our brain tripled in size from that of our nearest primate relative, was to enable us to think at a higher, more abstract level, and to feel more uplifting emotions that have greater depth. Like learning to use solar or wind power, Mindfulness teaches us how to be aware of, access and

optimize this powerful, evolutionary advanced, upper level of our brains. I will delineate a tri- level model of understanding of our brain, as it seems, that it was not just Gaul that was divided into 3 parts. The tug of war between our upper vs lower psychological levels, is the mental topography on which mindfulness enables us to learn how to: stand our higher ground.

3. I will also introduce the concept of -mental waste-, and Mindfulness as a problem-solving filtration tool, we need to develop in order to eliminate this mental waste, or at least, to reduce its harmful impact of it on our well -being. Our bodies are rather well-organized around the elimination of chemical waste, whether that be Carbon Dioxide or Blood Urea Nitrogen. However, outside of dreaming, there is effectively no provision for the elimination of this mental waste. Because of the absence of any built-in mechanism for the elimination of this mental waste, as NASA is wont to say, as human beings, "Houston, we have a problem!"
4. I will make distinctions between higher and lower levels of both thoughts and feelings, and detail how Mindfulness Training is somewhat different from traditional Buddhist thinking, which encourages the development of -no thought, no ambition, and Shunyata-emptiness. The Mindfulness I teach, encourages the cultivation of higher thought, higher feeling, higher impulse and higher ambition, rather than-no thought and emptiness. With Mindfulness, we learn to distinguish our useful, creative, problem-solving thoughts from the deluge of counter-productive ones. And, we encourage reflection as to why all human beings are afflicted with so many counterproductive thoughts and feelings. Mindfulness invites us to wonder why we, as human beings with the Rolls Royce of evolutionary brains, billions of years of designs and redesigns, spend so much of our psychic energies dwelling on negative and counter-productive stuff.
5. Mindfulness is further inspired by all we are learning about Neuroplasticity, that is helping to ground us in a concrete awareness of our ability not just to change our minds, but also to change our brains. It seems that if we are to find joy and inner peace, we must learn, like learning to play guitar or piano, to actually practice it. And, if we are to be less miserable, we have to become aware of how often we have been practicing our misery. As human beings, we all seem to have a knack for misery. Even more illuminating is the notion that, at every moment, it seems we are either practicing our well-being, and getting better at it; or practicing our misery and getting better at it.

So, with this overview in mind, in the language of CNN's journalist Chris Cuomo: 'Let's get after it. shall we?'

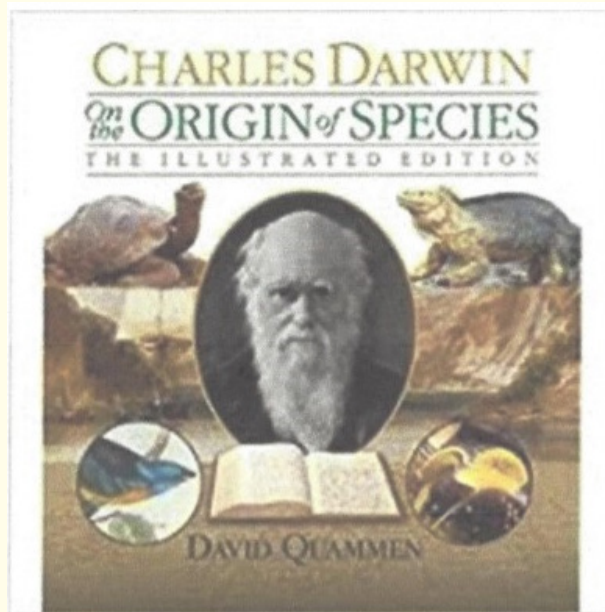


Figure 1

When we think of evolution, we think of course of Charles Darwin. His book, the Origin of Species, in 1858 [1], leading to his Theory of Natural Selection, continues to illuminate our fundamental understanding of how living species progressed toward more complex and intelligent forms, and how species are similar to, and different from one another. When Darwin was carefully examining the diversity of bird beaks, which would come to be known as Darwin’s Finches on the Galapagos Islands, he had no idea of the impending impact of his findings and theories, on our understanding of evolution for generations to come. While, on one level, Darwin elaborated new ways of thinking about how species adapt to survive, on another, more abstract level, he was demonstrating how really good ideas, themselves, survive. His thinking fits the criteria in Mindfulness, of what I call -higher level thinking- because his thinking and theories have been and continue to be useful and illuminating. At the heart of Darwin’s work, were careful, detailed, objective observations, followed by careful, thoughtful conjecture regarding the implications of these observations. Darwin was unaware that this 1 - 2 step, careful observation, followed by careful conjecture about these observations, would become the template for Mindfulness. Darwin carefully observed the outer world, and then made detailed notes about what he was observing. He then used his upper level cortex to theorize about these observations. With Mindfulness, we also learn to become detailed observers, but what we are observing is the fascinating world of our inner mental life. This shift from the outer world to the inner world, is what Osho calls the ‘Science of the Inner’.

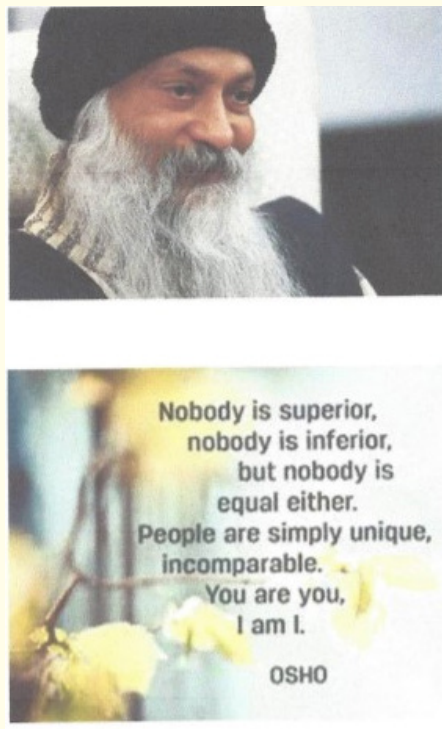


Figure 2

We can only observe our inner mental life from our upper level of our brains. The upper level is equipped to observe the lower, but the lower is unable to observe the upper. Our upper levels are also capable of doing what Gerald Ford could not do, i.e. walk and chew gum at the same time, as the upper level can observe itself, and, at the same time, can also observe the lower level. This ‘double vision’ is like a soccer player’s ability to keep one eye looking down on the ball; while the other eye peeks at the goal and the opponent. In contrast, our lower level can neither observe itself, nor, any other part of our brain’s mental functioning. Because of Darwin’s upper level thinking, we are all now able to think with greater clarity about evolution as a series of adaptations, the best of which help us survive; while those with the worst adaptations, perish. One striking adaptation for humans from our predecessors was the move from being quadrupedal to bi-pedal.

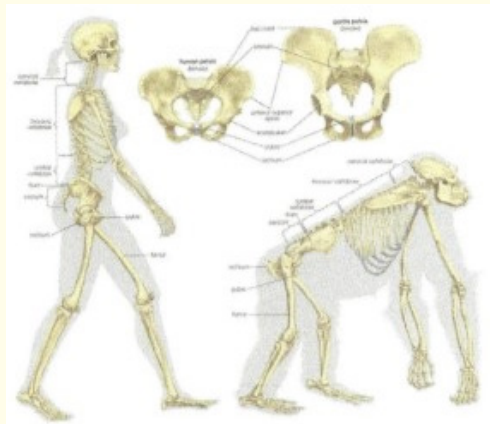


Figure 3

Another striking adaptation is the shape of our hands. We can see readily see how the shape of Chimpanzee hands and feet are so well adapted to transportation by tree branch.



Figure 4

While human hands are clearly not adapted for tree climbing, we can see that our hands are useful for many other purposes.



Figure 5

While the shift from walking on all fours, to being bipedal, freed our hands for other purposes, it has been the enlargement of the human brain, and the enlargement of neo and pre-frontal cortex, where the most significant evolutionary changes occurred.

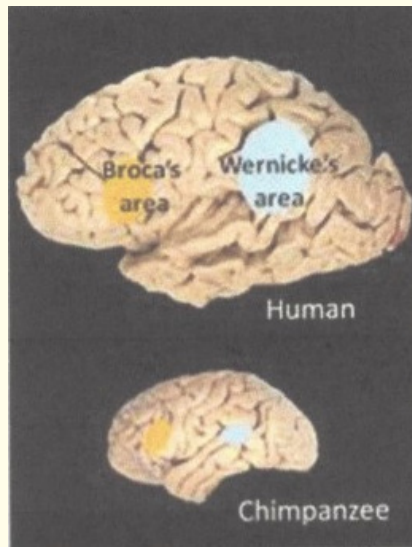


Figure 6

Chimpanzee

This huge enlargement of our pre-frontal cortex allows us to manipulate - abstract- mental ideas, which then allows humans to learn, comprehend, and understand things, in ways no other species can. I will introduce the idea here that: if the Chimpanzee hands are adaptations that allow them to readily grasp tree limbs; then the enlargement of the prefrontal cortex, is an adaptation that allows humans mentally to -grasp- ideas, and to think and rotate mental thoughts, as if they are playing with mental blocks. This allows us to build bigger, and more soundly built, mental buildings. With these mental capacities, we can both understand the idea of disease, as well as, the idea of antidotes for disease.



Figure 7

Let me digress for a minute, to one aspect of the work of Piaget, a Swiss Psychologist.

If you remember from Psychology 101, Piaget was able to outline the developmental age at which there was a dramatic increase in the human brains ability to think abstractly, which seemed to coincide with the further myelination of the brain between ages 6-8. Piaget showed clearly, in an experiment with children this age, that there was a point in their brain develop, when they became able to grasp the more abstract, three- dimensional concept of quantity, over the less abstract two-dimensional concept of size. At age 6, most kids asked the question which beaker contained more water, answered the taller beaker. But by age 8, however, most kids answered the fat beaker with the lower water height level [2].



Figure 8

Because our thoughts, feelings, attitudes, impulses, even our sense of self, are not tangible items, we can't wrap our hands around them, as a squirrel might an acorn. However, we can wrap the upper level of our minds around them, and we can do the three things that are at the heart of Mindfulness: 1) become aware of them, 2) Meta-Think-Think, reflect, and ponder about them, and then 3) carefully pick from amongst them, the best of the litter.

In the paper I wrote: "Me, Myself and My Amygdala" published in *the Global Journal of Addiction and Rehabilitation Medicine* in August 2017 [3], I introduced a Tripartite paradigm of the brain. The tripartite model is itself not new, because we have all seen the tri-layered model of the brain which shows the neo-cortex superimposed on the mammalian brain, which in-turn is superimposed upon the reptilian brain.

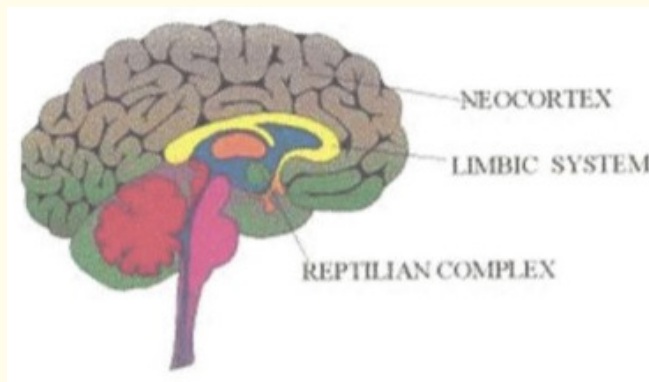


Figure 9

We can also see that in humans the neo-cortex occupies the greater part of the brain; and in earlier species only a small fraction.



Figure 10

Higher cortex (higher self) Level 3

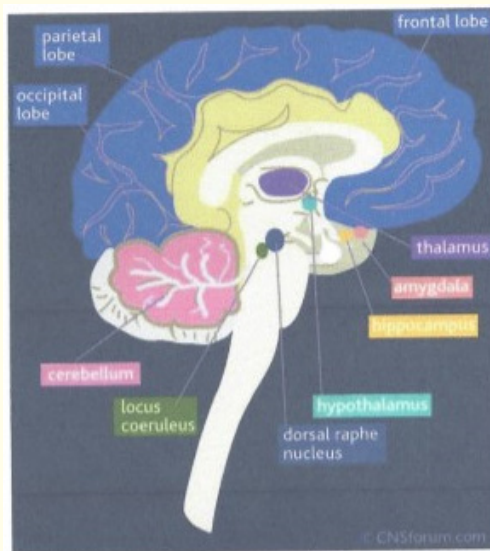


Figure 11

Brainstem Level 1 (No thoughts, No Feelings)

11 What is new in my work, is how we can begin to think about how we are psychologically affected by this three-level, upstairs-downstairs layering, and the consequent conflicting levels of our psychology that are derived from this layering. The brain stem- the lowest level- governs autonomic functioning like respiration, pulse, body temperature, and, like a Timex watch, keeps on ticking, even when we are in a coma. Its automaticity is essential, because imagine what would happen if we had to remember to breathe. The next level up, is the level which creates havoc for ALL human beings. It is called the Amygdala, Limbic area, and it is the area, that Darwin was referring to, when he wrote that: Man bears in his body the indelible stamp of his lowly origin." This is the fight or flight area of our brain. As it is located just above the brainstem, it too functions rather automatically. Many of its circuits are wired to bypass the cerebral

cortex altogether and go directly to the parts of our body that prepare us for fight or flight, by increasing our muscle tone, heart rate, and by heightening our attention. The Limbic, Amygdala area, is also the derived psychological home of our negative feelings, thoughts, and impulses, what might be called our lower mental-behavioral complex, if you will. This programming enhances the potential success of our fight or flight. It is our “Monkey Brain”. This is the area that -every- human being needs to learn about, as it is truly the source of our misery. I will also introduce here the distinction between, lower level thinking; which is derived from this area, and higher-level thinking, which is derived from the neo-cortex. This higher level allows us to hold a thought, like we are holding a melon and then decide if it passes the sniff test. This is called Meta-thinking, and it is at the heart of both Mindfulness, and all forms of therapy: to begin to think differently about what we have been thinking and feeling.

It seems that if we remove the cerebral cortex, that part of the brain that evolved over the past 2 million years, we eliminate our humanity. Beneath our cortex, we are not all that different from the Bengal tiger or Artic Fox. And if we remove more, we will find parts that approximate the brain of a salamander or rattlesnake. While the behavior that is generated from the lower parts of our brain are programmed, our cerebral cortex allows us, to extend beyond our programming, to develop modes of behavior that can be learned.

A large part of the mammalian brain is comprised of fight or flight neural circuits. Mindfulness calls upon us to be aware of these circuits, but not to be defined by them. It also calls on us to be more aware of the upper level of our brain, where our higher intelligence lives, and learn to regard it, as a 12 richer, more fertile area of our brain, for us to grow the mental crops we need not only to survive, but to thrive. Here’s an example of the huge additional benefit this upper level can provide: You come upon a poisonous snake in the woods, and the lower brain activates your fight or flight neural circuits, directing you: to run like hell, or to pick up a stick and try to kill the snake. But, it turns out that the snake is, factory equipped, with motion detectors that trigger it biting neural circuits, which means that if you pick either, fight or flight, you are likely to get bit and die. This is where the higher level of the brain comes in. While it is not instinctive, automatic, or as quick; the higher level has a unique, intelligent, problem solving capacity, that allows us to think, reason, plan ahead, and consider other options like: Be still don’t move: let the snake move on its way. It seems this capacity also evolved as a new tool to help us calculate better the intentions of others. And now, we can begin to learn to become more aware of our snake fearing, distressing, automatic reactions, and, to become still and quiet; and let those thoughts and feelings move on their way as well. Letting these distressing thoughts pass, allows us to think with great clarity, and chose more intelligently our best option. Being still, quiet, thinking with greater clarity, in order to choose the most intelligent option, is at the heart of Mindfulness.

Mindfulness calls upon us to become not only aware of what we are thinking, but aware of, from what level of our brain that thinking is coming from.

Let’s look at our levels of thinking with a few pictures.

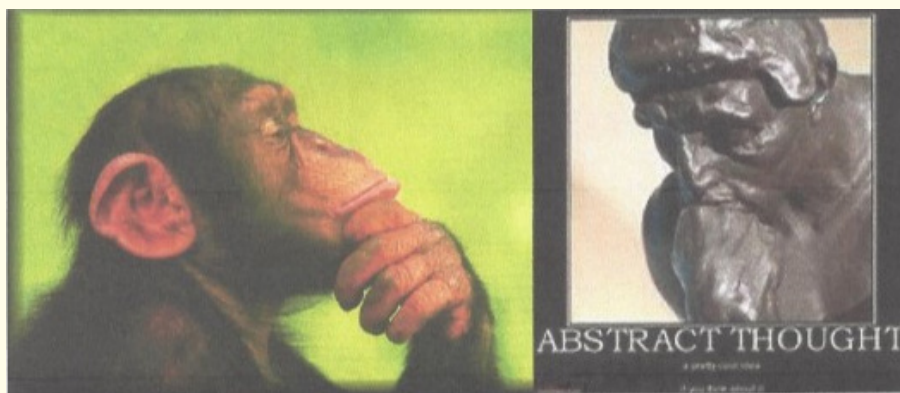


Figure 12

The shift from the lower level to a higher level of thought.

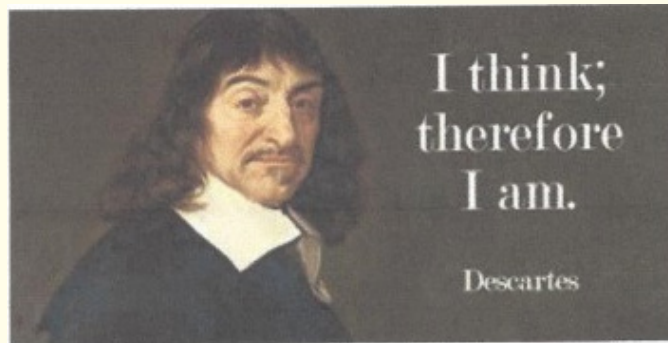


Figure 13

Old School

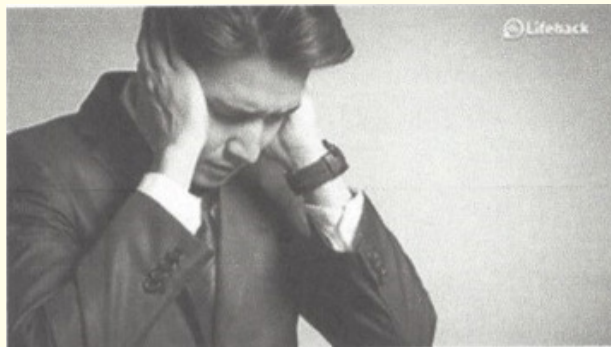


Figure 14

Buddhist Thought: I think therefore I suffer.

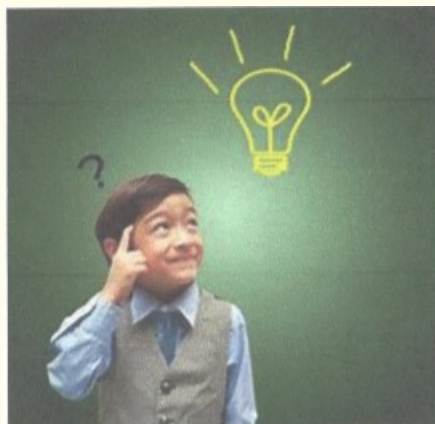


Figure 15

I Meta-think therefore I feel intelligent and happy [4].

We not only have upper vs lower level thoughts, but our feelings, impulses, attitudes, aspirations, behaviors, are derived from either the lower or the higher level. As human beings, we have unprecedented powers of thought. Yet, we are recurrently humbled by how often we make remarkably stupid decisions, which ironically, includes how often we think of ourselves as stupid. In one of my Mindfulness Therapy groups just last week, a fly that had made its way into the room started to annoy the heck out of the group members, who became even more frustrated every time they swatted at the fly, only to watch it gleefully escape their swats, time after time. I invited the group members to consider the difference in size, between their brain size, and that of the fly, and that almost all the fly’s brain was composed of an amygdala wired for escape. If they just observed, without being either judgmental of themselves, or the fly, they could observe, as if they had become modern day Darwinists, both their amygdala in action (aggressive, killing impulses, getting so aggravated and feeling so stupid and inadequate because they couldn’t kill the tiny bugger), and the fly’s amygdala (simply escaping).

In the Mindfulness Therapy groups that I run, learning to make the distinctions between upper level vs lower level, is the core homework assignment. Dr. Jeffrey Schwartz [5] is using this method in treating OCD by teaching his OCD patients in their Mindfulness Groups that their thoughts and impulses to wash their hands, check the doors, walk on the cracks etc. are coming from -faulty neural circuits-, and so they learn and mentally train to think differently about what they are thinking [6].

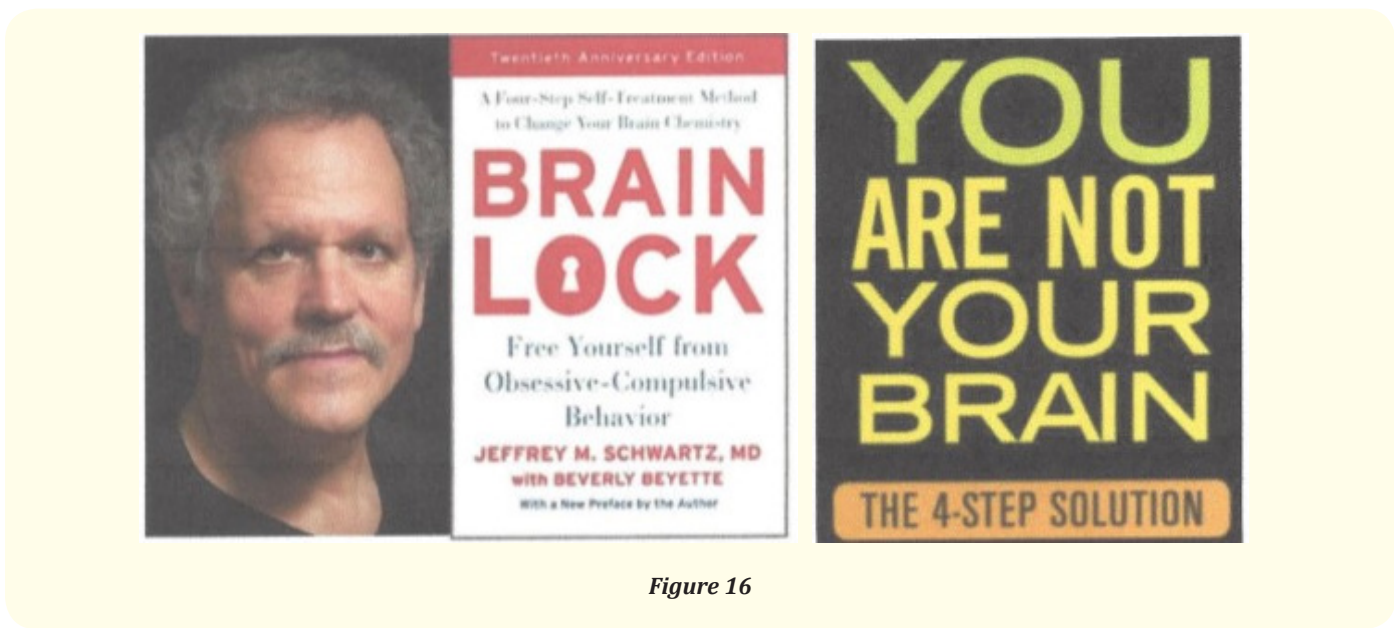


Figure 16

With mental training, they learn to determine if a thought, impulse, or behavior is coming from a faulty neural circuit, and if so, to ignore it. So too, can we learn to recognize and learn to ignore our negative counter- productive thoughts and feelings. A tenet on Mindfulness is that counterproductive thoughts and feelings, are not unique to those with psychiatric illness. Rather, they are unique to those with a human brain. Let me give an example. A woman in my Mindfulness Group wrote in her homework journal about her- Lower vs Higher Self, that when she had lost her keys, she noted the cascade of thoughts and feelings from her lower level. It started with lower level feelings of worry and anxiety, which were quickly accompanied by a series of negative thoughts such as, 'I am going to miss my appointments', which then escalated to, 'How could I be so stupid?' and climaxed in the emphatic thought, 'I'm such a loser'. Of note here, is a book by Gil Friedman a disciple of George Gurdjieff. Gurdjieff: A Beginners Guide: How Changing the Way We React to Losing Our Keys Can Transform Our Lives (2003). A lot of my Mindfulness thinking is derived from the pioneering work of George Gurdjieff, who developed a lot of his extraordinary theories about self-observation right here in Avon, France at the Institute for the Harmonious Development of Man [7].

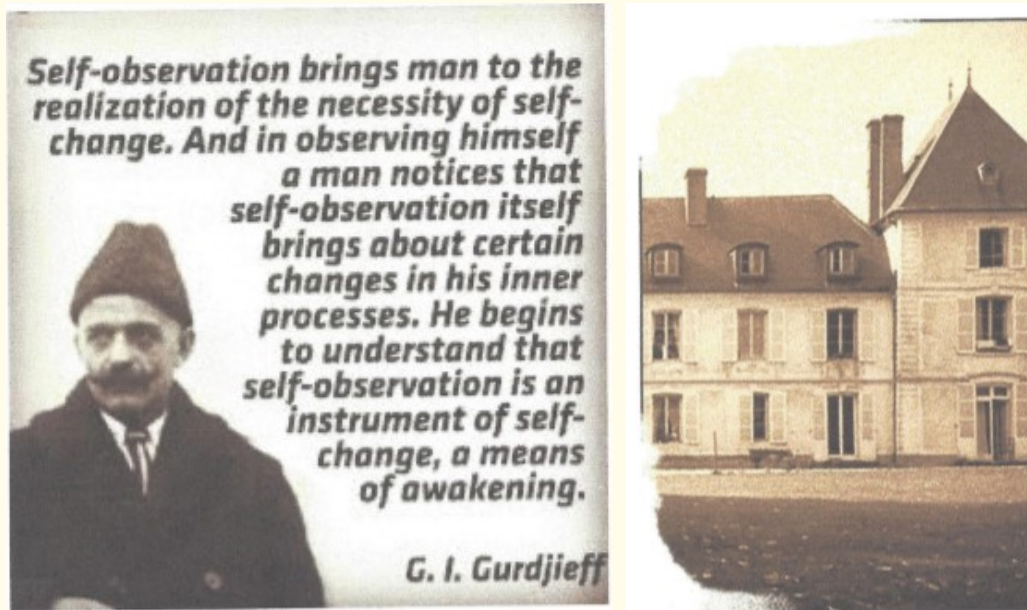


Figure 17

Institute for the Harmonious Development of Man, the Chateau Le Preieure' at Avon, France where many came to 'work' on themselves in 1922.

17 Central to Gurdjieff's thinking, is the importance of self-observation, and learning to be an objective witness to oneself. From a Mindfulness perspective, since we have BOTH a higher and lower self, we really have 2 selves to observe. This is the reason we are of two minds about most everything. As Yogi Berra said, 'You can observe a lot by watching!'. With mindfulness we learn to see with discernment, but without judgment. In fact, we learn to see how incredibly, and automatically judgmental our lower self is. We begin to see that in many ways the entire brain, is and organ of seeing, not just the visual cortex, and that the higher levels of our brain, are required to help us see the big picture.

Mindfulness also places a great emphasis on our learning to understand our body's relationship with toxicity. We can readily see how our body is intelligently organized, to extract that which is nutritious to the body, and to eliminate that which is toxic. Our gastrointestinal system does this, our kidneys do this, and our lungs do this. Our lungs are specifically designed to extract oxygen from the atmosphere and to eliminate carbon dioxide. Mindfulness, then introduces the concept of -mental toxicity- and looks at all negative thoughts, feelings, impulses and behavior as emanations of this mental toxicity. Mindfulness, then helps us to recognize that, there is not a built-in filtration system for this mental toxicity, no lungs for the mind, so to speak, And, lastly, Mindfulness calls upon us to use the best part of our brain, our neo-cortex to problem solve, how to go about the business of learning how to eliminate this mental waste. The same part of our brain that can design and build a bridge to cross a wide and deep river, can take on the task of the elimination of mental waste. There is a pungent distasteful odor to urine and feces, which helps us to be quite ready to gladly relieve ourselves of these waste products. However, in Mindfulness we must learn to recognize the distasteful smell of our negative feelings and thoughts. We can learn to identify, but not be identified by, these distasteful mental emanations. Unfortunately, most people feel that their lower self, is their true self. In Mindfulness, we learn to learn to become aware of the smell of our self-hating, lower level thoughts and feelings, like a wine connoisseur learns to develop a refined palate and smell, to help distinguish the good from the bad wines.

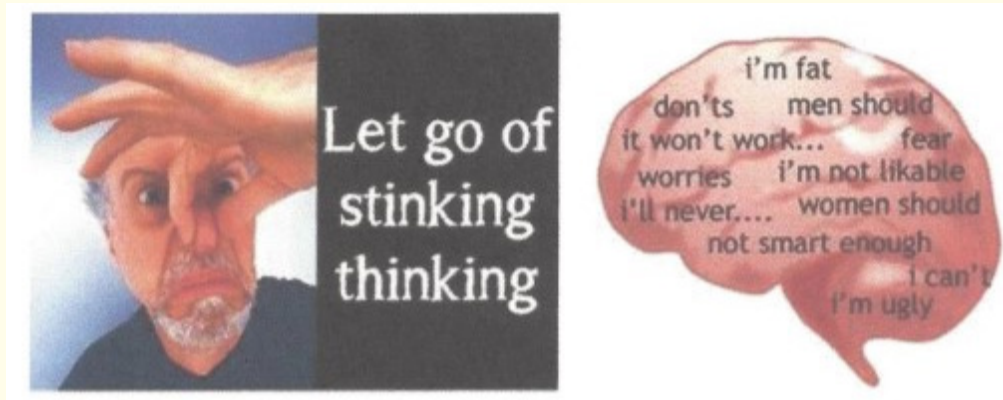


Figure 18

Finally, we know from the real estate world, that the value of something depends on location, location, location! The same turns out to be true for the various locations in our brains; as some locations of our brain, seem to be located on the peaceful and beautiful coast line, while other areas are polluted by factory smoke, and mental toxic waste. Mindfulness is helping us to understand better the relative value and utility of our cortical real estate. In Mindfulness, we train ourselves to locate where in our brain, the content of what is on our minds, is coming from.

If it is from the dusky basement, we acknowledge it, but then quickly move to a brighter area, and let those darker thoughts and feelings pass. We learn to become aware of our mental state, and which part of the brain it has come from. If we find ourselves in our mental slum, we do anything in our power to get to a better neighborhood, even if that means calling Uber. With Mindfulness, we learn that our thoughts and feelings, are like mental transport vehicles, that will alternately take us closer to, or further away from, where we truly want to go.

Amongst the brains many functions, we can think of it as an organ of cognition and emotion, both the higher and lower iterations of these. We know that thoughts and feelings are not facts. We know they are intangible, and that most of our thoughts are insubstantial, merely repetitions of the ones we had yesterday. With mindfulness, we learn to relate to our thoughts and feelings as interesting events going off in our brain, becoming increasingly aware, as we watch our mental fireworks, that so many of the thoughts and feelings that are firing off, are duds. We seek to be more aware of the negative, ruminative circuits, so we can learn to shift to the more uplifting, illuminating, creative, problem-solving circuits. Our mission is to learn how to tweak the circuits that underlie emotional security and well-being, while also learning to mentally floss the counterproductive ones.

Another key component of Mindfulness is to help us understand and transform our identity confusion, that I outline in my paper, 'Me, Myself and My Amygdala'. We strive in Mindfulness to be aware of and loosen the grip that the Amygdala has over our sense of who we are. We learn to have an I-It relationship with the Amygdala, in much the same way we would have that relationship with our gallbladder. When I think of my gallbladder, I think of it as an organ inside me. I would never think that I am a gallbladder, or that the bile in my gallbladder, in any way, represents me. With Mindfulness training, we learn that the Amygdala is inside us, but not us. In Mindfulness therapy groups, a typical Mindfulness journal entry might read: 'I woke up this AM, and IT (the Amygdala) was alive and kicking. IT felt irritable, and IT was thinking about having a drink, while-I- was aware I wanted to, and needed to, think through with greater clarity, what would be better choices for my day. This active dis-identification with the musings of the lower area of the brain, frees our truer self, to more fully reflect and identify with the neo- cortical, executive branch of our brain. With our executive branch, we can learn to recognize the lower psyches fight or flight circuits which, once upon a time, were built in for our survival; but now, often, create more of an obstacle. We must learn to recognize and overcome the unnecessary anguish created by of our own stress generating fight or flight responses.

We now know that the human brain is not limited to the neurons it is born with, but via stem cells, neurons are born into the 8th decade of life. We are just beginning to understand better, what promotes this neurogenesis, and it appears that exercise and doing things voluntarily does that. Neurogenesis may become the ultimate antidepressant. We know from our work with stroke victims, that the brain has greater capacity than we ever imagined, to repair itself by regeneration of brain tissue. We also know from those who are congenitally deaf or blind, that their respective cortical seeing and hearing areas learn to become rezoned to perform different related functions. What we understand from evolution, is that a gigantic step for human beings occurred in the move from aquatic to terrestrial life. Fins would develop into legs, and gills would develop into lungs to allow us to breathe and walk on land, enabling our land adventure to become successful. The moon landing is a significant milestone for man, for sure.

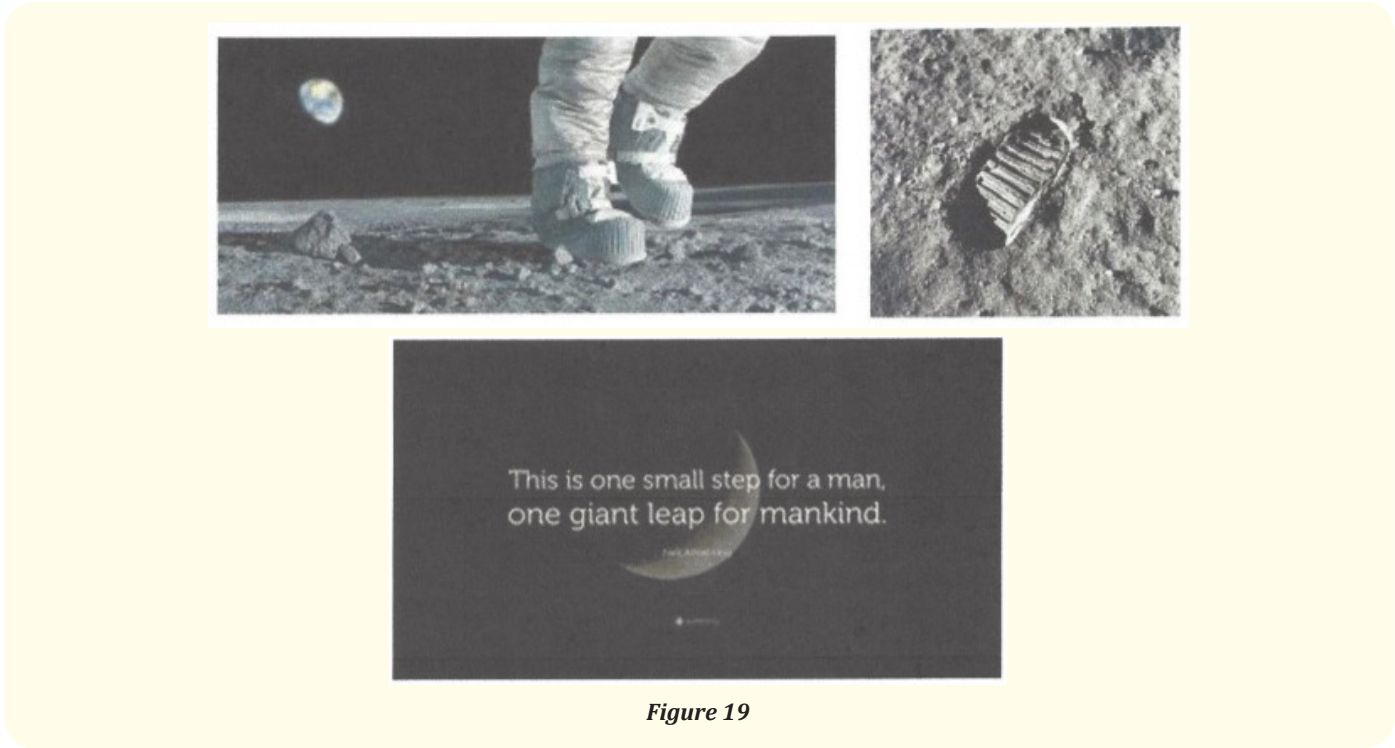


Figure 19

However, it is the evolutionary step from ocean life to land life, which still may be, upon greater reflection, the most important step that has ever been taken for man and mankind.

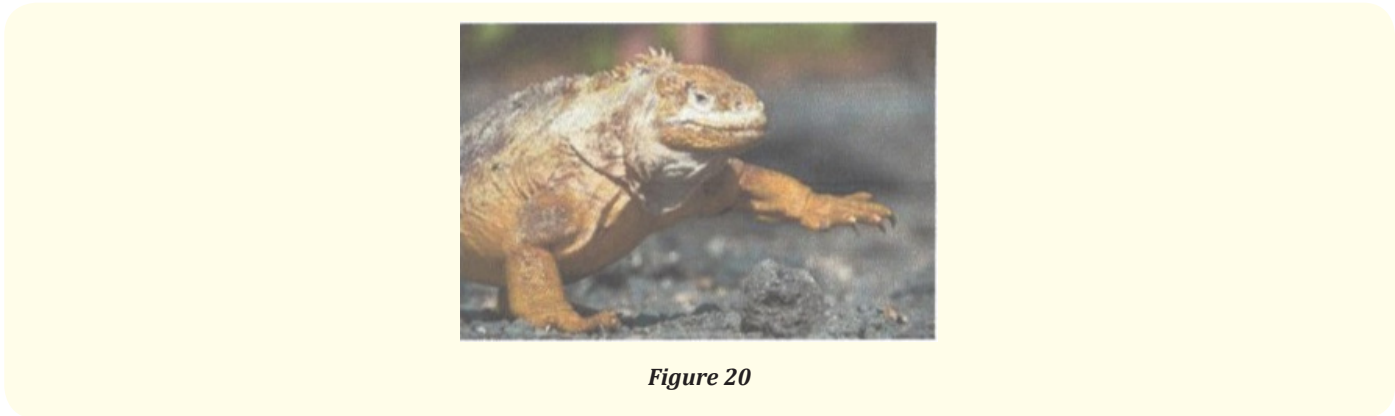


Figure 20

THIS is one small step for man, one gigantic leap for mankind.

When we take time to pause, reflect and think about all that is packed into our rather amazing brain, we readily discover that it is richly and tightly packed with thousands of neural circuits, that amongst other functions, govern a wide range of feelings, ranging from mild irritation, and disappointment, to the spicier resentment and bitterness, on the one hand; to love, joy and compassion, on the other. Meanwhile, our thinking oscillates from the ridiculous to the ingenious. When we are born, we are all called upon to become, ad hoc, musical conductors of this largely untrained neural circuit orchestra, as we attempt to make some harmony out of it all. And there are no instruction manuals, no operating instructions that come with the brains we are born with. In a dream, I had the other night, I was visiting with an old college friend and his wife, who were having some rather typical marital struggles. In the dream, as she went to bed, he reached out to her, to say good night, hoping for her to reach back. But rather than reach back, she closed the bedroom door, and I awoke at the sound of the clicking of the door she locked behind her. At that moment in the dream, I said to my friend in an effort to comfort him, trying to distill the wisdom of 40 years of couples' work, that 'It's is really very difficult to love and resent someone you care about at the same time.' Does anyone in this audience know why our brains are packed with so many circuits devoted to bitterness, and resentment? Or why, these emotions so easily hijack us? With Mindfulness, we learn to regard such emotions, as, at the least, counterproductive, if not, out right, toxic and useless. We then train ourselves not to indulge them, but to creatively find some way to liberate ourselves from them, as if we are trying to get out of handcuffs, or a straitjacket.

As we look to the future, instead of going to Mars, the next most important step for mankind might be the cultivation of Mindfulness itself. While we are born with an aptitude for Mindfulness, we really have to be taught how to develop and utilize it. We can learn to become aware of, and restrain the worst parts of our mental functioning, as well as, to access and cultivate our best and higher selves, so that we can become more peaceful, loving and compassionate to ourselves, and others, and create and sustain a peaceful and thriving planet.

I had the good fortune, 2 weeks ago, of seeing Chick Corea display his amazing talent on the piano. While watching him, it occurred to me that our upper psyche is like a piano, built with the potential to make incredible music, but only if we train ourselves how to get the beautiful sounds out of it. Fortunately, to become more peaceful, loving, and compassionate, we do not have to become virtuosos with our mental pianos, but we do have to learn and practice making the creative and beautiful mental music we are all capable of.

I'd like to conclude my remarks today by saying a few words about purpose. The Mindfulness method I have developed, is called the Purpose Driven Mindfulness. Certainly, we can see, as we study our brains, just how purpose driven they are. But if we look more closely, we can see they are driven by both lower and higher purposes, that are often in conflict. A tenant of Mindfulness is that our well-being is tied to the degree to which we are aligned with our higher purpose. But what is our higher purpose? We can get a glimpse of our higher purpose, by firstly, becoming clear what it is not. Clearly the -purpose- of having the best brain on the evolutionary market is not to have us consumed but negative thoughts and feelings about ourselves. And, without a brain we would have none of these negative thoughts or feelings. But we all must become humbled by, how seemingly effortlessly our brains produce just that. We might say about an orange tree, that its purpose is to grow, produce leaves, blossoms, oranges, and fragrance, and seeds for the next generation. What is our comparable human purpose? Our purpose is certainly not to produce negative thoughts and feelings. But without a brain, we would have none of these.

One Mindfulness exercise I have developed to improve the quality of our brain-mind awareness and to help us to become more aware of our higher purpose, is to imagine a conversation between a human and a tree which would go something like this:

Human to Tree: 'I must confess, I have tree envy, I look at you and you seem so contented and peaceful. You seem rooted, and down to earth. You seem peaceful, and in no hurry. You seem focused on your purpose to grow taller, grow leaves, bloom buds, produce fruit, fragrance and seed, and you do not bother comparing yourself to any other tree. You have no idea that you are a tree, or that you are alive, or that you are vulnerable to sickness and death. You represent to me a way of being alive in the world, that It seems I can only dream about.'

Tree to Human: 'I really do understand your perspective, and, yes, being alive without being plagued by a single negative thought or negative feeling, just thoroughly enjoying being alive, and celebrating life, and celebrate being alive, is the greatest experience ever. It is at the heart of what I think the East calls Nirvana. However, I must confess, I have human envy, and I would give my right limb to know I was alive, know I was a tree, and know that I will not live forever. I would give my left limb to communicate verbally, to love, to dance, to hear music and to comprehend even a thimbleful of what you understand about the universe. Given that you have your rather amazing brain, and I have none, can't you learn to utilize its rather amazing capacities, and learn to take all the negative and thoughts feelings that plague you, with a grain or two of salt?



Figure 21

With mindfulness, we can learn to be more aware of, and ultimately amused by, the part of our brain that interferes with our higher purpose. We can't teach the lower part of the brain how to be peaceful, it's just not built that way. But we can learn, not to allow it to define us, govern us, and keep us from fully realizing our loving, kind-hearted, funny and fun-loving, joyous and peaceful higher nature, or to keep us from cultivating and bringing forth, our unique contributions to the world. What makes human beings unique, beyond being able to think and feel an incredibly wide range of thoughts and feelings, is that we can become more and more aware of what we are thinking and feeling. Moreover, we can learn to be more selective regarding which of these thoughts and feelings to embrace. Unlike any other living species, we are aware we are alive, aware that we will die, aware we are human, aware that we have a brain, and aware that we can use our brain to learn. We are the only living species that can use our brain to learn about our brain. We can also train our brains through mental training, in a way, comparable to developing cardiovascular fitness through exercise, to develop a kind of mental fitness, where we become better able to endure distress, and keep ourselves from being distracted from the intelligent, purposeful pursuit our well-being. We can do this, by becoming more fully aware, as to which parts of our brain will help get us there, and which parts are getting in the way. As we move forward, our survival may become less dependent on being the most fit physically, as Darwin illuminated in the Origin of Species, but on learning to become being more mentally fit: a kind of Survival of the Aware-est. if you will. Put more positively, Mindfulness can be seen as a tool, that we can learn to cultivate, that can help us to not only survive, but to thrive. Our prefrontal lobes evolved to help us pay attention to that which is most important, to extract what is most relevant from our experience, and to help us integrate a multitude of our functioning toward our highest purpose. Humans don't produce oranges, but is not the fruit of our humanity, our love, kindness, and compassion? We can learn to use Mindfulness to be aware of our need to ripen, and to help create the internal mental climate to facilitate this ripening. We can learn how much of our own discomfort is created from within. We learn to insert higher level associations into the

magical millisecond between a trigger and a response, allowing us to access and sustain more positive mental states of inner peace and serenity, and to avoid the pot holes of our negative, lower-self-centered preoccupations. As a result, anger, and ego-centric desires, flash for moments, not hours and days, as we find access to a powerful force in us, that not only allows us to be aware of our lower levels, but also empowers us to lift ourselves up and out of these swampy states, enabling us to realign with our higher purpose, where we feel more fully alive, more illuminated, more open-minded, wiser, more joyful and freer of the parts of our nervous system that would otherwise hijack us.

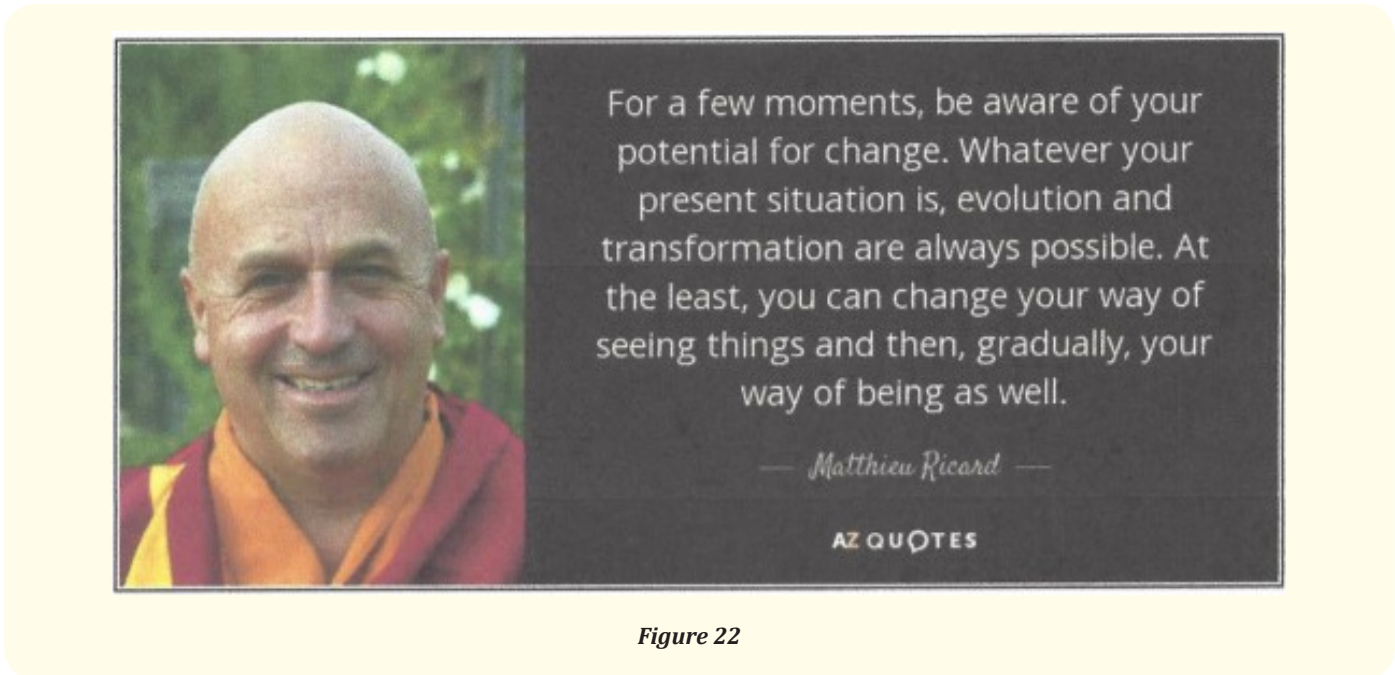


Figure 22

Matthew Ricard [8] is a brilliant Buddhist Monk and writer, who received his PHD in Molecular Genetics in 1972 from the Pasteur Institute. It could be said that that his transformation was from looking inside our molecular cells, to helping us learn how to escape from our mental cells.

My hope is that Mindfulness will become as fundamental to our education and learning, as reading and arithmetic, and that we will start teaching children in elementary school to become more interested in their brains, and learn to understand and utilize them better, for their own benefit, as well as, for the benefit of mankind. Until we design and implement this curriculum for our children, let's get cracking on ourselves, shall we?

Conclusion

Darwin taught that as human beings we are capable of wise, intelligent thinking at a level that is different from any other living entity. He also taught us that throughout nature, unique features like this are 'engineered' to help insure survival. Our neo-cortex and pre-frontal cortex allow us to be the only living entity that is aware that we have a brain and to be aware that we have an inner mental life, that can either be beneficial or harmful. As we learn to carefully observe and not judge our inner mental life, we discover that so much that is on our minds is of no benefit, and what's worse, much that is on our minds is actually counter-productive. Dr. Ackerman presents Mindfulness as a unique capacity of our pre-frontal cortex that we can develop that can help us separate the mental shaft from the mental wheat, which allows us to select amongst the wide range of feelings, thoughts, and impulses we have only those which are truly beneficial, and through a process he refers to as 'mental dialysis' free ourselves from all that is mentally toxic.

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