

Failure is Not an Option, It's a necessity

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by

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Abstract

We have been taught to strive for success and to eliminate failure. However, failure is essential to the health, adaptability and sustainability of all natural systems; and we are biological beings. This essay explains the essential role of failure in maintaining sustainable beliefs and actions in individuals and in societies. It explains why we can only postpone but not eliminate personal failures such as mistakes, conflicts, sickness and death and communal failures such as wars, plagues and poverty. Many times when we postpone failure we simply make it more catastrophic. A wiser course would be to understand, to accept and to accommodate the natural constraints that make it necessary to fail from time to time; then we could better co-operate with natural processes to improve personal successes, sustain healthy societies and to minimize human suffering.

Introduction

How many of us have failed at something vitally important (like career, family, religion, society) ... in a way that made it clear that our personal beliefs, attitudes, choices, and actions were entirely responsible for that failure? I know I have. At the time I was devastated and depressed as the awful reality of personal failure dawned on me. However, over the years that first experience of colossal failure and others since have helped to reshape my beliefs and actions in ways that seem to have strengthened me. For one thing, I learned that I had the strength to recover from failure. That confidence enabled me to take the risks that led to some of my proudest accomplishments.

What follows are a few quotations on the subject of personal failure:

"We are all failures--at least, the best of us are." Sir James Matthew Barrie (1860-1937), British writer

"Remember the two benefits of failure. First, if you do fail, you learn what doesn't work; and second, the failure gives you the opportunity to try a new approach." Roger von Oech, Author

"If you want to increase your success rate, double your failure rate." Thomas John Watson, Sr. (1874-1956), American businessman, president of IBM

"A man can fail many times, but he isn't a failure until he begins to blame somebody else." John Burroughs (1837-1921), American naturalist, writer

"The leaders I met, whatever walk of life they were from, whatever institutions they were presiding over, always referred back to the same failure: something that happened to them that was personally difficult, even traumatic, something that made them feel that desperate sense of hitting bottom--as something they thought was almost a necessity. It's as if at that moment the iron entered their soul; that moment created the resilience that leaders need." Warren G. Bennis (b. 1925), American writer, educator, University of Southern California sociologist

We are biological creatures and thus a part of nature. All natural systems rampantly overproduce and are relentlessly pruned by other natural systems. This push-pull, differential, process has sustained life on earth for nearly 4 billion years in part because it insures adaptability to change and it recycles and redistributes essential resources. Overproduction and relentless pruning has sustained successful species of complex organisms for as long as a few million years and within some species has sustained individuals for as long as one hundred years before internal programming produces their deaths. The pruning of individuals by accidental and programmed deaths, and the pruning of species by extinction are as necessary to the survival of life itself as nutrition and reproduction.

In contrast to the differential processes of nature, we have formed some single ended and unsustainable beliefs about the relative necessity and goodness of production and the badness and waste of pruning. We presume that things which produce and support production (such as births, good nutrition, consumerism, wealth, full employment, abundant food and water) are successful, helpful and good, and things that prune (such as sicknesses, deaths, accidents, medical mistakes, starvation, wars and economic depressions) are failures, evil and threatening. We strive to build on successes and to eliminate all failures. Although these beliefs seem natural and self-evident, they are recent convictions probably brought on by the transient successes of modern civilization during the last 300 years, and by wishful thinking.

What could be better than striving to eliminate all war, disease and poverty? These objectives seem so obviously noble and superior to their alternatives that to question them is political suicide and moral depravity. However, it should already be evident that our success at increasing production and eliminating pruning has come at a price: an unsustainable population and standard of living. As a diminishing percentage of us in the bosom of modern civilization temporarily isolate ourselves from failures, physical and mental, mankind as a whole faces a relentlessly growing probability of uncontrollable, global disasters: plagues, wars, mass starvation, deprivation and human degradation. We are running out of water, energy, food, and living space. We are destroying the oceans, the atmosphere and the earth with the pollutions of our civilization. Yet we, who have the education and wherewithal to rationally and scientifically change course, are fully satisfied with our judgments and actions primarily because we live well. Our past success has fossilized our cultural and religious beliefs to the point that reason alone is incapable of altering them.

There are fundamental, neurological factors which leave us in this untenable situation. Understanding our own biology and its impact on our thoughts and cultures can help us to make better choices; ones that don't eliminate failures but instead accommodate them more wisely to produce desirable and sustainable cultures and civilizations. In the long run, personal and cultural failures are essential to sustaining the human species; even for the most successful and educated people and cultures. This means that catastrophes such as economic depressions, plagues or wars are sometimes necessary.

The Human Brain

Our thoughts, judgments and actions are generated by and through our brains. A brain is an amazing instrument; it is possibly evolution's most marvelous construct. But the human brain is both enabled and constrained by its biology. It is awesomely complex and capable; it is also limited, stochastic, imperfect and uncertain. It, like an immune system, is designed to operate quickly and efficiently within a local, and presumably fairly consistent ecosystem which includes a physical body, a community of people, and a culture. However, like the immune system, it must also be able to adapt to changes in one or all elements of this ecosystem. The necessary balance between efficiency and adaptability has evolved an organ that usually requires a significant "failure" of old patterns to produce a major change in its beliefs, decisions and actions.

Our brains are biological systems which are shaped by evolution and modified by our individual experiences. Our self-awareness, our thoughts, our attentions, our

actions, our memories, our emotions, our sensations, our attitudes, and our behaviors all spring from and produce patterns in our brains.

Our brains have evolved to enhance survival in the natural world: a world of uncertainty about food, shelter, climate and immediate threats; a world of varying resources and a relative handful of other human beings.

Our brains have not evolved to maximize survival in modern civilization with its complex, abstract systems and plethora of people. Nor have our brains evolved to deal with non-immediate issues... or issues for which there isn't a strong "recent past" memory. For example, consider our concerns about personal safety and terrorism before and after 9/11. The terrorist threat had been building for over a decade, but we recognized it only after a catastrophic event. Brains are biologically wired to be sensitive to rapid changes, like 9/11, but to ignore slow changes, like global warming. Throw a frog into a pot of boiling water and it will try to jump out. Put it in a pot of cold water and slowly heat it to boiling and it will sit there as it dies. Antelopes always respond to rapid movements by their predators but seldom respond to stationary or very slow movements by them.

The human brain uses roughly 20 watts of energy, about 20% of the body's total energy budget. It is fueled by the body in exchange for enhancing the body's survival. So, the brain has evolved to avoid making changes or initiating actions that consume mental or physical energy unless immediate survival is involved.

Learning

The human brain is plastic: it can physically change based on experience. The basic source of its plasticity is the neuron, a living cell.

- Each brain contains roughly 100 billion neurons which vary widely in shape and complexity
- The average neuron has about 1000 synapses, tiny regions which enable communications from one neuron to another. A synapse is a bio-chemical connection from the axon (output) of one neuron to a dendrite (input) of another neuron. However, there are many types of neurons and the number of synapses for one type of neuron can be fewer than 100 and for another type more than 10,000. The number and strengths of a specific neuron's synapses also changes with its activity and with age.
- Neurons form numerous groupings and patterns of interconnections dictated by genetics, developed before birth, then modified by experience after birth. In fact, the number of neurons and their connections experience a substantial overproduction and pruning

process in early life, and an ongoing production and pruning throughout life.

The brain's plasticity results from changes in the number of and relative strengths of thousands of synapses in specific regions of the brain. Some regions store memories, some shape attitudes, emotions, or logical process; other regions filter data from the organs and senses or initiate and filter outgoing signals to the rest of the body.

The seat of consciousness is in the pre-frontal cortex of a human brain. This area receives messages from different parts of the brain which we (our consciousnesses) perceive as sound, light, pain, smell, emotions, memories, etc. We call the different dimensions of perception *quales*. How we perceive sounds as different from sights or emotions we don't yet understand. But the mystery is that all these sensations are basically the same kinds of electro-chemical signals when they reach the pre-frontal cortex. They only differ in where they come from in other parts of the brain. As a consequence, when a small percentage of people hear sounds they also see lights produced by the sounds because some neurons in their audio pathway are miswired into their visual pathway. [1, 2]

Triaging

Every conscious brain is continually overwhelmed with new information and available memories. It has the endless task of discerning critical data buried in a vastly greater quantity of useful data, less useful data, useless data and noise. It must correctly select and process a miniscule percentage of the sensory data that floods in and select only a tiny fraction of its memories. It must systematically ignore all else in order to function at all.

This triaging task is equivalent to that of a hospital staff with the capacity to help 10 patients a day, but swamped with 10,000 new patients every day. The triaging itself takes resources, and must be done in a way that leaves the most important resources available to deal with the most important issues. To do this, the brain applies both evolutionary filters and learned filters: biological filters, unconscious filters, subconscious filters and a handful of conscious filters. The conscious filters are the last steps in the triaging process. All the filters are ultimately biological infrastructures as real as the physical infrastructures of civilization.

Our mental infrastructures operate so as to get acceptable results most of the time, to use as little energy as possible and to reserve the conscious mind for the most important or most novel situations. Thus, the conscious mind is designed to operate on a

"management by exception" basis. It only deals with issues that make it through the triaging process.

Things that involve the conscious mind include:

Learning something new requires conscious effort in the pre-frontal area (top management) to construct new memories, new filters and new cues.

Changing personal beliefs or skills requires conscious effort to learn something new, to deconstruct something old and to integrate the new with the remaining old.

Changing cultural or political beliefs commonly held by friends, family, church or community usually risks having to change our relationships to these people. This change is the most risky and takes the most energy.

Learning something new or changing beliefs and skills takes so much energy that, biologically, we are biased to avoid the effort until existing belief systems utterly fail us. Even then we sometimes maintain those beliefs. We triage out information that conflicts with our established patterns so as to avoid wasting energy.

The last five steps of triaging

Elizabeth Kubler-Ross wrote *On Death and Dying* in which she describes a universal process followed by people who were told by doctors that they were dying of cancer. I believe that what she describes are actually the last five steps of every human brain's triaging process.[3]

- 1. Denial:** The doctor must be wrong, there is no Global Warming, Evolution is only a theory. *Result: I don't need to change.*
- 2. Anger and Blame:** "They" are responsible for this problem, they must fix it. *Result: I don't need to change*
- 3. Bargaining:** Let me make simple adjustments or go through some rituals and then let me go back to life as usual. *Result: I don't need to change very much*
- 4. Depression:** There are two distinct sub phases here: first depression at letting go of the old beliefs and relationships and next depression at dealing with the new ones. *Result: I realize I need to change, but I don't know whether or not I have the energy or skills to do it.*
- 5. Acceptance:** I will accept the new reality and adapt so as to make the most of it, step by step, one day at a time.

People go through this five step process in different ways. A few go from Denial to Acceptance in days or weeks. They spend their last days adapted to the new reality and making the best of it. Most people get stuck

in one of the first four steps and die, still in denial, anger and blame, bargaining or depression.

But these reactions are universal. Simply look at people's reactions to catastrophes such as the devastation of New Orleans by hurricane Katrina. Within days some evacuees had accepted that their old lives were gone for good, and that they had to find new jobs and new homes. Others stayed behind and now insist on rebuilding New Orleans the way it was so that they can get back to their old lives. Others, many of those who could have prepared for the emergency but didn't, sat and waited for help and blamed government for not preventing the disaster or for not acting faster. Evacuees and other supporters of government officials are stuck in denial about the obvious failures of their leaders; even though those leaders have made repeated failures of enormous magnitude and import.

Actually, we need look no further than to our own reactions to failures that challenge our operating beliefs. Have we fully accepted our own responsibilities and need to make changes or have we gotten stuck in one of those triaging steps? For example: Are we energy wasters complaining about the price of gasoline and blaming government or oil companies? Are we smokers suing tobacco companies and yet still smoking? Are we drinking alcoholics or injecting drug addicts who blame others for our predicament while we wallow in our self-indulgences?

I recently wrote an essay "*Why I won't vote for George Bush.*"¹ It was originally intended for a few friends (mostly conservative Republicans) to explain to them why I would not vote for a Republican president for the first time in my life. Later I posted it on my web page.

The essay received two kinds of responses, both from friends and from strangers: One response, from Bush supporters, was a total denial of any need to consider my thesis. They of course had "good" reasons such as one candidate's moral convictions, his dedication to fighting terrorism, or the reader's assumptions about my motives. One long time friend suggested that I'd been corrupted by Liberals in Boston where I'd recently spent a year of study. Friends thought it was well written, but clearly said that it didn't alter their own convictions. The other response, from Bush antagonists, was an enthusiastic acceptance of my thesis. However, not one reaction from either group suggested that my articulate reasoning had altered any of their strongly held convictions. My ego was salvaged when I later read that, according to Plato's Dialogues, Socrates never managed to change anyone's belief systems either, even

though he rationally demolished the specific beliefs of dozens of people.[4]

That failure to be persuaded by reasoned arguments is to be expected because our deep convictions are formed from numerous, massively redundant layers of relatively weak beliefs produced in different regions of the brain: sights, sounds, feelings, memories, personal relationships, etc. A particular quale of rational thought is itself relatively weak and incapable of disconnecting the massively redundant, multidimensional moorings of strongly held, and usually self-serving, belief systems.

Ways to alter beliefs other than by failure

1. Turn things upside down so that familiar patterns are missing.[5]

2. Isolate, learn, then integrate: Build new ideas, capabilities, attitudes, etc. in isolation from existing ones... i.e. second language, learning to play the piano. In the Middle Ages, Thomas Aquinas was allowed to study Aristotle after he described it as Philosophy, something apart from religion. (The Catholic Church had earlier banned the study of Aristotle seeing such study as a direct religious threat) He was then able to learn about Aristotle's philosophy and then apply selected parts of it to enrich his faith.

3. Fiction/Fantasy/Humor/Games

4. Metaphors

(Actually 3-4 are also ways to isolate ideas into environments wherein we can consider them without having to deconstruct existing beliefs.)

Observations:

To paraphrase Tony Buzan: The Brain is the only instrument we use for everything, yet we're never taught how it operates.[6]

We will better appreciate our differences of belief systems and the essential value of failure in our learning processes once we learn how our minds operate. Of course, learning how our minds operate takes energy and a willingness to change.

¹ Available on the internet at: www.elew.com

References

1. Edelman, G.M., M.D., Ph.D, *Wider Than the Sky: the phenomenal gift of consciousness*. 2004: Yale University Press. 202.
2. Bear, M.F., B.W. Connors, and M.A. Paradiso, *Neuroscience: Exploring the Brain*. Second ed. 2001, Baltimore: Lippincott Williams & Wilkins. 856.
3. Kubler-Ross, E.M.D., *On Death and Dying*. 1969, New York: Scribner Classics. 286.
4. Beversluis, J., *Cross Examining Socrates: A Defense of the Interlocutors in Plato's Early Dialogues*. 2000, Cambridge University Press. 416.
5. Edwards, B., *Drawing on the Right Side of the Brain*. 1989, Los Angeles: Jeremy P. Tarcher, Inc. 254.
6. Buzan, T., *Use Both Sides of Your Brain*. 1974, New York: E. P. Dutton. 128.