

# Emergence and the Human Mind

Second edition

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**P**inch yourself gently on the arm. What you feel is an electrical signal sent from your arm through trillions of atoms and nerve cells to your brain and back to your arm so fast that it seems instantaneous. That is an amazing phenomenon. But what makes it more amazing is that the atomic and subatomic particles the signal is traveling through, even though they make up the many parts of our body, are not living matter. Everything in us is made of atoms which have positively charged protons, neutral neutrons, and negatively charged electrons; they are electrical entities, not living things.

Everything in our bodies comes from the stars, which although very active, are not living things. Once the process of stellar nucleosynthesis starts in a young star, it can fuse together hydrogen atoms into helium atoms for millions or billions of years. But when the fusion fuel is used up, a large star will explode and disperse a variety of trillions of atoms heavier than helium into space. What has turned out to be crucial in our human evolution is that many of these atoms floating around in cosmic dust, such as carbon, oxygen, iron, and others wound up creating Earth and us. Carl Sagan was right. We are star stuff.

Although our star-born atoms are not alive, they are able to send the sensation of feeling through our body because of a phenomenon called emergence, in which the fundamental constituents of something, when they interact with other constituents, have complex abilities that the individual constituents by themselves do not have. Or as Stephen Hawking put it in his book *The Grand Design*: "...there are many instances in science in which a large assemblage appears to behave in a manner that is different from the behavior of its individual components." Thus, emergence occurs when the output is greater than the sum of the parts. Without emergence there would be no life on Earth.

Emergence happens at our molecular level and in this essay we will take a look at how it could happen as well on a societal level. Like atoms emerging into living entities, the consciousness of each one of us can combine with others and emerge into a moral and ethical global consciousness that is greater than any we have achieved so far.

A good example of emergence is you. Your body is a complex group of atoms that form a vast array of chemicals which combine to form trillions of living cells and become home to trillions of living microbes. Thus, from non-living atoms emerge the many components that keep you alive.

Atoms combine with each other through a process called electron valence in which the electrons in the outer shells of atoms jump to other atoms which need electrons. Early in the evolution of Earthly life, atoms of carbon, hydrogen, oxygen, nitrogen and their valencing electrons came together in the right combinations to form molecules of amino acids, which had life-building capabilities that made them more than the sum of their atoms. This was a form of emergence that laid the groundwork for the long and eventful evolution of life from single celled bacteria to humans.

The next step in the process of emergence was when amino acids came together into chains called peptides connected electrically by hydrogen bonds or electrostatic interactions in which hydrogen atoms covalently bond other atoms together. When chains of peptides link together, they are called polypeptides. A polypeptide of 20 or more amino acids can become a large molecule of protein. Although proteins are not alive, they are an essential part of every cell in every living creature on Earth. The human body contains at least 20,000 different types of proteins that vary in size and function according to the arrangement of the atoms in them. Chemically targeted to perform specific functions in the body, these proteins keep all our cells from brain to bone running smoothly. The number of proteins

in our body varies as they are made and then recycled. The total quantity of proteins in our body at any one time is probably in the many trillions.

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It was not until groups of different kinds of proteins came together to form the organelles in a primitive cell called a prokaryote that signs of life began to appear. Each of these cells contained ribosomes, deoxyribonucleic acid or DNA and ribonucleic acid or RNA, and a flagellum for movement. The uncountable number of single-celled bacteria and archaea in the world contain prokaryote cells. As evolution continued, through a complex process first described by Konstanin Mereschkowski in 1905 and refined by Lynn Margulis in 1967 called symbiogenesis, some prokaryote cells evolved into more complex eukaryote cells that are in all multi-celled organisms today, including your body.

As mentioned, the peptide to protein sequence led to two things that all cells, both the older prokaryote cells and newer eukaryotes, evolved to contain: DNA and RNA. Both RNA and DNA are made of carbon, hydrogen, oxygen, nitrogen, and phosphorus atoms which come together to form molecules of nucleic acids. DNA and RNA are the chemical structures that guide the building of proteins that develop into our various kinds of cells in both plants and animals.

When cells began to form into organs with specific purposes and established the ability to chemically communicate with each other to maintain homeostasis, life on Earth had emerged and was firmly established. Although scientists are still working out some of the details of exactly how inorganic matter made the great chemical-biological leap to organic living entities, one thing is clear: once life got started on Earth, it has managed to maintain itself through a number of catastrophic upheavals from volcanoes, floods, asteroid crashes, fire and ice and never for a moment ceased. Individuals are fragile, but communal life continues to survive.

The biological emergence and continuation of Earthly life is an amazing story, but perhaps the most profound example of emergence is your ability to think enough to read this essay and comprehend what it is saying. Your mind is more than the sum of the billions of brain neurons that regulate your bodily functions from breathing to digestion to keeping your heart beating. Your mind, your conscious introspection, and your ability to think about yourself and your environment emerge from the billions of cells and trillions of atoms in your physical brain. Consciousness is the grandest and most remarkable aspect of life. Our level of human consciousness is what separates us from other animals.

So here you are, an introspective, thinking human being unlike any living entity in our solar system and perhaps for many light years beyond. Celebrate yourself. If there is life beyond Earth, it too will probably be made of atoms which have come together and emerged into a living organism.

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We acquire the many different types of proteins our bodies need in two ways. They are in some of our food such as meat, eggs, and beans, and they are also made in the body. Under the chemical guidance of DNA and RNA, proteins are built from amino acids in the ribosome inside each of our cells. Each different protein is made to serve a specific purpose which other cell organelles called the endoplasmic reticulum and Golgi apparatus help prepare them for.

Once proteins are used for their intended purpose, they are then recycled back into amino acids and rebuilt into different proteins. Some proteins last only a few minutes, some last years. The average lifespan of a protein in the human body is about 1 to 2 days. Protein synthesis is a fascinating and complex process and one that is absolutely essential in every living being on Earth. Millions of proteins are being synthesized in your cells right now. Your body is intricately complex and constantly emerging.

Like proteins, the cells in our bodies, except for most brain neurons, also are periodically replaced by two processes called autophagy and mitophagy, processes which cause cells to degrade before being recycled. Some cells are replaced every few days, some every few years. Physically, you and I are not the same people we were a couple of years ago.

Now, after more than 3 billion years of natural selection we humans consider ourselves the most complex example of inorganic to organic emergence on Earth. We are the result of the sum of innumerable atoms that through the movement of electrons from atom to atom formed amino acids which bonded together into polypeptides creating an uncountable number of proteins. It is protein combinations that make up the 30 trillion eukaryotic cells that constitute a living, thinking human being that is much more complex and mobile than the microscopic parts it is made of.

The fact that we are able to comprehend this process that keeps us alive should make us appreciate how unique we are on Earth and in our solar system. We have not come through the perils of natural selection to fight and destroy each other, but to care for and nourish one another and keep our species on its path of living, learning, and comprehending ourselves and our universe.

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In the last few decades, some scientists have pointed out that an important function, if not the primary function, of DNA is to replicate itself, to keep a species alive so that its genes pass on to new offspring. DNA keeps itself alive by constantly overseeing the creation of new proteins that perform a variety of functions in the body. This system of self-replication works for all living entities, plants and animals, including humans. In the 3.8 billion years that life has existed on Earth, the main objective for the trillions and trillions of animals that have come and gone, was to stay alive long enough to pass on their genes to the next generation. Survival of the genes was paramount and many plants and animals go to extremes to carry it on. We see this today, for example, in the epic migrations of salmon and many other species.

Human evolution, however, has added another dimension to that biological drive for survival. The phenomenal achievement of all the billions and trillions of our elemental building blocks is that they created the human mind, making us the most alive, the most conscious, and most introspective lifeform that we have yet discovered in the universe. Humans go beyond the process of passing on our physical genes like other animals. Our minds, by our array of thoughts and languages, also pass on to the next generation the knowledge we have accumulated over a lifetime. Physical replication leads to mental replication.

We humans are a collection of curious and mobile minds thinking about ourselves and searching in the universe for other introspective minds. And whether we someday find other intelligent creatures beyond our solar system or not, we can certainly be pleased that our evolution has brought us to the point that we can study our past, learn from it, and look forward to our future as we explore our immense universe and look for others of our kind.

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Material, biological, and mental emergence brought us to where we are today. The next step is to realize that our minds have emerged to the point where we can guide our mental evolution into making us more mature humans. While our DNA controls the physical aspects of our drive to survive, it is our minds that need to continue going through the process of evolution and emergence so that each one of us can make a contribution to becoming part of something greater than ourselves, even greater than our religions, our nations, or our cultural dogmas that tend to cause us to break into antagonistic factions.

The human mind is evolutionarily a relatively recent development. It is believed that we began making stone and bone tools as early as 3 million years ago...a long time compared to the human lifespan, but only a small fraction of the 3.8 billion years of life on Earth. From these early hominin creations, we are now sending satellites beyond our solar system. In spite of its youth, however, our collective mind is so strong it has developed the ability to control its own future. If we act together as mature human beings and leave our greed and childish selfishness behind, we have the ability to transform human society into the harmonious, cooperative, and peaceful community that wise and thoughtful people know we can build.

At our base, we are all Homo sapiens...wise people, and some of us migrated out of Africa about 200,000 years ago and spread into just about every habitable area of Earth. Although we established a plethora of cultures largely based on environmental conditions and social needs, all of our minds everywhere work the same. We all have the same emotions and the same physical needs. Sometimes we are nice to each other, sometimes we are antagonistic. Members of our species all over the world have picked up many good traits as we evolved that helped us establish communities where individuals work together for the betterment of everyone. Unfortunately, we also developed a few bad ones such as greed and aggression that caused us trouble in our past and are continuing to cause us trouble today.

As we continue to mature mentally, each of us can emerge into a creative and productive member of a harmonious global community we can come to realize that greed and aggression, especially on a national level, sets back our evolutionary progress toward global cooperation. We need to work toward emerging from our boundaries of cultural bias and political allegiances to become not Chinese, not Russian, not American, etc. but citizens of a prosperous, productive, cooperative world community.

Out of our many cultures we have developed religions, nationalism, and divisive politics for centuries and these institutions have made some contributions to our global interconnectedness. But they have also many times contributed to tearing us apart. And given the volatile predicament of the world today, it is debatable as to how much we need to continue to be devoted to these institutions as they currently exist. It is time to remove the barriers. Many of us take pride in our local culture and customs, but they should not be allowed to become so entrenched that we refuse to enhance them by learning from other cultures and customs.

We would be wise to consider ridding ourselves of many of our old habits and behaviors, as well as much of the dogma and doctrines of the old institutions that are holding back our evolution into fully socially mature humans. Many sagacious people advocate a more global and humanistic society rather than one fragmented by political, religious, or cultural ideologies. As many scientists and philosophers

have pointed out, the well-being of our civilization depends on our willingness to learn from evidence and not rely on unfounded opinions.

Sometimes we are too willing to believe things we are told without checking the veracity of a statement or opinion. Check the evidence behind a religious or cultural dogma or the motivation behind someone's political rhetoric before you commit your mind to believing what you hear or read.

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As creatures made of atoms and molecules and subject to the laws of physics, it is possible that as our population increases, we are becoming more vulnerable to the second law of thermodynamics, the law of entropy, which basically states that closed systems tend to get more disordered as time progresses. Earth is not a closed system physically because the sun is constantly supplying it with energy. But as far as human mental life is concerned, we seem to function as a closed system psychologically. Our source of mental energy is ourselves.

Earth is now home to over eight billion people, eight billion points of view on how the world should work, and eight billion hungry users of Earth's limited resources. Could our trillions of daily interactions with each other, some logical and rational, some illogical and irrational, have an effect on our level of global mental energy?

These uncountable numbers of interactions can be our weakness or our strength, depending on how we interact and our attitudes toward each other. Positive interactions with each other bring us together, and entropy or loss of energy is lowered. We become more unified and cooperative. Negative interactions split us apart dissipating our mental energy and increasing our level of entropy thus reducing our level of cooperation and productivity. Conflict wastes our energy and increases our entropy.

As debilitating as entropy is, it can be slowed or overcome when an organizing force intervenes. For example, our sun constantly provides Earth with an energy supply through the photons of light that it generates. Energetic photons keep Earth's entropy level low. Photons fuel photosynthesis which keeps plants growing so our physical energy needs are supplied and our brain functioning.

But it is our minds that we need to keep at a high energy level. The force to keep humans from falling into entropic disorderliness is ourselves. We need to be aware of our ability to control our short-term behavior and our long-term evolution and not allow our global civilization to become the victim of disorganization that could send us into uncontrollable conflict. Taking control of our behavior and not letting our base animal emotions run wild is crucial to our future preservation and well-being. Although the law of entropy is so strong that it applies to the life span of galaxies, stars, and perhaps even to the fate of the universe, we humans have the mental capacity to keep it from destroying us. We ourselves are the source of the energy to keep our mental entropy low.

We are fortunate to have our minds. We have done marvelous things with them, but we have also used them to cause great suffering and destruction. A result of all of the death and suffering we have been through is that we have absolutely determined that the best use of our minds is to use them to prevent the entropic disorganization of our species. Our minds can overcome the entropic tendencies that plague us such as the tendency to foster conflict and be aggressive. When we understand the lessons of

our history and take the long-range view of our future, we know that building a peaceful, cooperative, and productive civilization is our only way to ensure a safe and prosperous future for all of us.

We can look forward to the time when we are be happy that we have evolved beyond the years when our level of entropy was high... beyond the years of strife and conflict that plagued our ancestors and still plague us today.

The highest use of our energy that will bring us to the lowest level of entropy is to establish global symbiotic relationships where our unity and cooperation make the best use of our energy. This is a goal to work toward that we can reach if we understand ourselves well enough to put the outmoded traits of greed, selfishness, and aggression out of our minds. Think positive and share your mental energy.

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Evolution has created a wonderful and intelligent species of animal from our ancestral atoms created in the hot and high-pressure centers of stars billions of years ago. We can thank our stars that produced the atoms that formed Earth's first amino acids, and the slow but eventful process of natural selection for bringing us to this point. Perhaps we are one of the universe's most fortuitous accidents. For example, we could not have turned out the way we did if the Earth had been a bit closer or a bit farther away from the sun. And for those who look forward to the changing of the seasons, thank the Mars-sized planet that collided with the Earth about 4.5 billion years ago giving Earth a 23.5-degree tilt which causes our four temperate seasons. Yes, we are surely the result of an unpredictable series of events that made us the human beings we are today.

Through natural selection, the species that best adapted to its environment survived. Many of the animal species we see around us have been around much longer than Homo sapiens. Like us, they adapted and flourished. It is our ability to continue to adapt to our circumstances that will keep us going. We need to appreciate that we have come this far and do everything we can to keep ourselves going. Cooperative peace instead of destructive war is absolutely essential. The other undebatable essential is taking care of our only source of food and air...Earth.

Evolution and natural selection brought us to this point. Now it is time for us to take over the task of ensuring ourselves of a peaceful, cooperative, and productive future. Obviously, we have a few flaws in our thinking to work through. But we are bright enough to take control our mental evolution. We can control the behaviors that will build our peaceful future and we can overcome our propensity toward conflict by eliminating it by our human-guided natural selection.

Our self-controlled natural selection promotes global peace and cooperation while the old and outdated concepts of greed, selfishness, and aggression fade out like a species of animal that failed to adapt to its environment and was supplanted by a more adaptable species. The selfish dictatorial leaders of today are not adapting to our new thinking and they are on their way to extinction.

The first step is for each one of us to decide that we are going to move beyond an attitude of thievery, of the lust for power, and of not caring about the Earth or the eight billion people living here. For evolution to flourish we need to throw off a few bad habits that continue to cause us sadness and suffering. We do not need antagonism toward each other. As simple as it sounds, an important first step you or anyone else can take is to make up your mind to be nice to people you interact with. It is a small step, but multiply your kindness by eight billion people, and we are all happier and much better off. You

are part of our human evolution. Spread your kindness and our evolution to a friendly world will take a great leap forward.

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The science of cosmology is explaining our place in the universe as we continue learning about the forces that make stars, our sun, our Earth, and us. Knowledge of the laws of physics and biology help explain who we are and understanding these laws has enabled us to delve deep into the workings of how life, at least on our planet, has evolved. Our increasing knowledge and our great strides in technology are enabling us to make new discoveries every day. The quest to continually learn is the height of our humanity.

Thoughtful people in all fields of human endeavor are building mental momentum as we learn from the mistakes we have made in our history. We need to keep preparing ourselves for a way of life in which we maintain the best of our human traits and discard the ones that cause conflict and sadness. But we have adjustments to make if we are going to stop being victims of our own bad behavior that keeps us too often fearful of each other and antagonistic. Paranoia and aggression are a bad combination, deadly and destructive.

Crime, killing, and wars are holdovers from our past that we must rise above. Because we continue to be fearful of each other, because many of our leaders continue to lust for power and use humans as expendable tools to achieve it, because so many of us feel victimized or cheated, because we tend to take our political, religious, and cultural issues too seriously, we are holding ourselves back and keeping our minds in a state of anxiety and defensiveness.

Our minds are not free. It is as if wars, crime, and the lack of compassion we sometimes exhibit are examples of emergence going backwards. Some of our behavior could be interpreted as devolving back into the selfish, egocentric antagonisms that we should have outgrown many years ago. These and other challenges cloud our thinking and cause our mental entropy to stay at a high level.

But challenges create opportunities. Although we are, as physicist Stephen Hawking pointed out, merely educated apes on a small planet in one of billions of galaxies in the vastness of space, the fact that we can understand our universe makes us special. Carl Sagan eloquently expressed the same point when he wrote: "We have begun to contemplate our origins: star stuff pondering the stars; organized assemblages of ten billion billion atoms considering the evolution of atoms, tracing the long journey by which, here at least, consciousness arose."

We should be celebrating our good fortune rather than fearing and fighting each other. Appreciate and celebrate your humanity and allow others to do the same. Given the enormous number of combinations of human traits our DNA can come up with, you are unique in the world. One of a kind. Celebrate the good in yourself and in others.

Be happy that you are here even though your current circumstances may not be pleasant. Understand that we are all going through life together. While some of us go through periods of anxiety and uncertainty, we all share the same starry sky, the same beautiful sunsets, the same colorful flowers. These moments of beauty tell us that the greatest thing we can do is be kind to each other. Encourage others to enjoy life as you strive to enjoy it. Everyone will be better off because of your kindness.

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We have come far in our technology. Rockets sent into space and artificial intelligence are making our lives interesting and a little bit anxious. We don't know what we will find on other planets or how far we can go with AI until we realize that maybe we have gone too far. But what is obvious is that understanding the workings of our marvelous minds is what we need to work on as much as any endeavor we have going at this time. What in our minds motivates us to act in a friendly or an antagonistic way? Why do we let our emotions cause impulsively bad behavior even when there is time to let the frontal cortex analyze the situation? Impulse behavior is easier and quicker and quite often more destructive than taking the time to think about what we are doing.

Not only are our minds challenged in today's world, but many of us face bodily challenges as well. When Thomas Malthus published *An Essay on the Principles of Population* in 1798 in which he predicted that if we are not careful, we could allow our population to outstrip our production of food, the world population was slightly less than one billion. There are now over eight billion of us, and we all must eat to stay alive. That is eight times as many of us as in 1798 on the same patch of land. We need to keep coming up with new ways to increase food output or those who shunned Malthus as too pessimistic, may need to take a closer look at the situation.

We must keep in mind that the Earth is our only source of food, water, and air. If we destroy parts of it, we harm only ourselves. The Earth does not care about us one way or the other. If we starve to death or blow ourselves up, Earth will continue on for billions of years just fine without us. It may suffer for a while in the wake of our nuclear fallout and the decreased number of animal species that we have or will kill off, but Earth will recover and carry on as if we never existed. There might not be much left of us in a few thousand years, so we need to make the best of what we have right now. Homo sapiens evolved around 200,000 years ago. Will our species survive another 200,000 years?

Our future is up to ourselves! Instead of praying for help, why don't we offer help to each other. Instead of worshipping one of the numerous deities we have invented over the years, why don't we give our devotion to each other as fellow humans who seek to be productive, happy, and who desire to live in harmony with their fellow humans. With the power of our minds, we can survive and prosper. But when we ignore our obligation to our fellow Earthly sojourners and fill our minds with hate, we poison them.

Of course, we are never going to love everyone we meet or hear of. The biblical admonition of love your neighbor as yourself is more metaphorical than realistic. The best we can do is make the attempt to be kind and try to find the good in everyone. Is there at least a sliver of goodness in even the worst of us? Of the eight billion of us, there are probably a few thousand who are so egotistical or so steeped in trying to please a despot ruler that the lives of others are considered not important. Other people simply get in their way. Their sliver of goodness is well hidden behind a fog of self-centeredness, bias, or groveling sycophancy.

But the thousands of us who are causing most of the world's troubles at this time are only a small percentage of the billions of the rest of us. We must believe there is enough goodness deep in all of us to keep hoping that we will achieve a higher level of global harmony or cooperation than we now have. Although the few greedy thieves are causing a disproportionate amount of turmoil in the world, the optimism of those who seek global peace and harmony among nations keeps us going.

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Two variables to our well-being are critical. One is that we must control how we use Earth's resources. And closely related to it is that we must control our relationships with each other. Neglecting either one of these could cause us serious problems. If we are going to continue to feed ourselves, we must promote farming, both traditional land farming as well as aquaponics and other high-tech farming. And going right along with having plenty of food is the need to promote global peace in which everyone contributes symbiotically to the well-being of everyone else. We must have food and it must be distributed fairly. If we do these two things our future is assured. Food and peace are essential. All of our other endeavors depend on these.

Good farming requires that we must grow crops on fertile land. We cannot allow our fertile soil to turn into hot sandy desert unless we can develop a taste for cactus and sagebrush. Keeping the Earth cool enough to grow good food is essential. It follows also that another feature necessary to our well-being is that although many climate factors may be beyond our control, the quality of the air we breathe and the purity of the water we drink are certainly aspects of our environment we can and must control. All of us must have nourishing food, clean water, and clean air.

Thus, climate control and our level of aggressiveness toward each other are our two great challenges. Perhaps in the next few years we can adapt to some changes in our environment and survive, but if we do not get our aggressiveness under control, we could easily become another extinct species. We have a mental malady that we need to address. And it will only be cured by ourselves.

The crux of the problem is that we are not using our powerful minds to build the global cooperative society we are capable of building and that we sorely need. Although economically we have established a thriving global trade network which so far is enabling us to feed billions of ourselves and provide decent homes and an adequate standard of living for the vast majority of us, socially there is still too much fear, distrust, and animosity between nations, religions, and cultures. This animosity, which is sometimes subtle, sometimes overt, keeps us from achieving the great potential for harmony and cooperation that the wisest and most thoughtful among us feel we are capable of achieving. Balancing our self interest with the needs of others requires an open mind and a willingness to compromise.

The wisest and most thoughtful among us know we can do better than we are doing now or have ever done in our past. Your wisdom and thoughtfulness can help make the world a safer and happier place. All of us need your help.

As daunting as the challenge seems, perhaps soon we will become so sickened of our immature and aggressive behavior that we will have no choice but to make up our minds that we definitely are going to build a more cooperative and harmonious global society. Except for a few backward thinking leaders who still believe that power is in the barrel of a gun rather than the human mind, most of us are ready to settle down and allow humanity to continue its evolution toward peaceful harmony and away from confrontation and conflict. The grand opportunity is upon us. As we augment our minds, we will have less use for weapons.

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We are habit-forming people, and unfortunately changing some of the habits we have evolved with for thousands of years is not going to be easy. All of us get into patterns of behavior as we go through the day, habits and patterns that we are comfortable with. Now multiply those patterns of behavior by several million people and you begin to understand how difficult it is for us to break out of our bad

habits of deadly wars interspersed with periods of peace. Then, even in times of peace, we are constantly vigilant while preparing for the next war. Conflict, negative attitudes, and war have become deadly habits that all of us need to stop.

Another bad habit that many of us have fallen into is believing too much of the information we see on television or read on the internet or in some tabloid newspapers. We want to be trusting people and hope that our fellow humans would always tell us the truth about politics, economics, social issues, etc. Unfortunately, however, there are many people out there in cyber-land or newsrooms who make money or promote a hateful agenda by generating false information.

It is unfortunate that so many gullible people read this spiteful spewing and believe it to be the truth. If journalism could make science news as sensational as the sex lives of celebrities or alien abductions, we would all be happier and better educated. The most sensational news on Earth is the sequence of events from the beginning of the universe to the growth of life and the evolution of humans.

A few years ago, it was hoped that the global internet would enhance peace by allowing people around the world to get to know each other and interact in a friendly and constructive way. Occasionally, there is some good news on the global internet. But it seems that most news is unpleasant or it is sent out by hardheaded people trying to persuade us to think a certain way. What the internet has done, along with promoting the good aspects of humanity, is allow the imprudent members of some fringe organizations to spread lies and hateful, divisive propaganda. Along with communicating how kind and generous we humans are, the internet also has become a mouthpiece for those who represent the worst side of our complex human nature. The internet was intended to bring us together, not split us apart.

Unfortunately, some thieves and hackers see the internet as an unguarded bank vault. Stealing money from gullible people is bad and the internet is a tool that the worst of us have learned to use to take advantage of the trust of others. The criminal mindset is a human trait whose demise we hope is coming soon. But we live with it, and the only way not to fall victim to internet thievery is to be extremely cautious. Don't fall for dubious schemes.

To add to the frustration of putting up with internet thieves, the cyber world also seems to be plagued with internet political spite-spouters. And what is ironic is that many of them are not sure why they do it. Some of us seem to be addicted to spewing confrontational rhetoric and we are not exactly sure why we behave this way unless it is just as an ego boost or a way of drawing attention to ourselves. Unfortunately, in today's media saturated world, exaggerated sensationalism gets more attention than a rational straight forward and honest reporting of the facts. The real tragedy is, however, is that so many people do not analyze what they hear and readily accept senseless rhetoric as truth and then form their opinions about human relations on it. For some of us it is easier to believe than to think. It is easier to be angry than to extend the hand of friendship.

Is a fearful and antagonistic nature so embedded in so many of us that we find it difficult to be friendly to each other? We become so biased by whatever news we hear or whatever dogma we are exposed to that it seems that for many of us it is easier to go along with the crowd than take the time to think seriously about what someone tells us we must believe. It is important that when we hear an opinion or a promise on the news, we must take the time and make the mental effort to decide if we want to believe it or not. Of course, that is sometimes hard to do in a hurry up world that demands a quick

answer. Slow down and think. Give your frontal cortex time to analyze the information pouring into it before the amygdala brings on a flight or fight reaction.

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In a few cultures around the world our minds are lost in a fog of dogma and propaganda that we need to emerge from so that we can think more clearly about our goals beyond the ridiculous bickering going on in the world today. We have political problems, territorial problems, and outright greed where one nation blatantly usurps land and resources from another. It often boils down to which autocratic leader thinks he or she has an army strong enough to defeat a neighboring nation. It is the same type of bullying behavior that humanity has been putting up with for thousands of years. Can't we outgrow this stupid childish behavior that creates so much suffering and destruction?

Another problem that has been with us for many centuries is religion. For thousands of years, we have invented a plethora of gods that we have endowed with human traits from the highest ideals of our sense of ethics and morality to having tyrannical life or death power over individuals. For centuries in some religions, we have allowed those who claim to represent a god or group of gods the power to punish followers who do not demonstrate the proper amount of submission to the dogma and doctrines of the religion. There are many examples in our history of religious authorities exploiting their influence beyond logic, reason, and rationality. It is time we outgrew allowing this imperious and arbitrary power.

Yet, because they assuage our fear of death or the frightening unknown future, we have endowed our priests, pastors, rabbis, imams, etc. with the power to carry out the man-made directives of our man-made gods. We are admonished to listen to them carefully. Perhaps some of them mean well, but they perpetuate the problem of humanity giving itself over to beings external to ourselves when we should be turning inward. We humans can and must take care of ourselves and solve our own problems. Our religious leaders are as human as the rest of us. Although some of them are nice people, they don't have any closer communication with a mystical prophet, a deity, or any kind of supernatural being than you or anyone else has.

The situation is complex. Some religious sects build hospitals while others condemn people to death because of apostasy. If you feel the need to believe in something higher than humanity, give careful thought to the traits you will endow that spiritual entity with; you could do yourself more harm than good. You and others would be better off if you gave your time and devotion to people rather than spending time with spirits. Is it easier to imagine an invisible spirit floating around in the sky than to look your fellow humans in the eye? First, do your part to bring peace and cooperation to your fellow humans, then you can pray to whatever god is convenient.

Do what you can to be a stabilizing force for others or at least listen to their situation. Many people need little more than someone to talk to who will earnestly listen to them and pay attention to their particular needs.

Thousands of years ago perhaps there was some logic to giving our loyalty over to gods who we believed had made the world and had control over it. We had no science to explain the sun, the moon, or ourselves. So, when some people offered answers to our questions and comforting solutions to our anxieties, we listened to their advice. Sometimes these shamans had eaten plants that caused a psychedelic experience leading them to believe that they had communed with spiritual beings beyond the realm of humanity. Brain neurons can be chemically altered to perceive things that may not actually

be there. The problem is that many of our ancestors took the rantings of psychotic shamans to be true utterings from the gods.

The most pantheistic of these visionaries led us to believe that all of the heavenly bodies and everything on Earth was alive and controlled by a variety of gods. The monotheists, on the other hand, claimed there was only one big God who controlled everything. Some of us believed one way, some believed another. Both kinds of belief brought us great psychological comfort in times of anxiety. We now had an easy explanation for everything and gods to pray to when we needed help.

It all seemed so reasonable at the time. Not only did we believe the gods listened to us and would be good spiritual parents to us, but religious gatherings brought worshippers together fostering a sense of social unity in the community. For many people religion has offered spiritual comfort as well as the psychological comfort of being a member of a like-minded group.

The comforting news spread from one community to another and many cultural groups around the world latched onto the concept of believing and worshipping imagined spiritual beings in the sky, on Earth, and inside ourselves. All over the world we designated mountains, trees, rocks, etc. as sacred places where gods dwelled and where we could go and commune with them.

For many years, we were a young species, impressionable, and desperate for answers. In many ways, we are still a young and impressionable species. Even today there are still sacred mountains, places, and rocks that have some sort of spiritual significance to particular religious groups. The good news now, however, is that we have science to give us valid answers to our existential questions. We are able to determine how rocks, trees, and mountains came into existence. Like you and the rest of us, they were made by the complex forces of nature, not by gods. Each of us needs to learn science. It is a more analytical and honest assessment of how the universe works.

We have learned good and bad from our past. It is behind us. We have plenty of future to keep us busy.

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As our minds developed, we became inquisitive about our surroundings, and about ourselves. We became much more introspective than our hominin ancestors. We had to know who we are and where we came from. Since answers from science were centuries into the future, we made up mythologies to explain our origins and about the great heroes and gods that shaped and ruled our cultures. Myths became important to our national or cultural identity. We did not have facts, so we created fiction. And for many of us the fiction became fact. Even today, in some cultures around the world that do not have a scientific mindset, myths are still considered true accounts of how Earth and people originated.

Given our insatiable human curiosity, nearly every culture that sprang up around the world from Africa, to Europe, to Asia, to North and South America came up with some version of a religion and mythological creation story. Over thousands of years most of these religions and myths have faded out completely while the remnants of some still can be found. It is hard for some of us to get used to thinking for ourselves after years of depending on gods to do our thinking for us.

It is interesting to see in the history of religions how so many religious sects come and go because of various disagreements over ideology, rituals, the importance of sacred relics, and other points of conflict. And in the last few years, race, gender, and other social issues are causing established religious organizations to split into new sects. Oh, my! What would Jesus think about all of this fussing?

These religious conflicts will not go away because all of them are based on irrational premises. Being the emotional and overly dramatic species that we are, there have been many gods who we humans allowed to have power and influence over our lives. For example, Zeus, Jupiter, Yahweh, Jesus, Brahma, Vishnu, Shiva, Genesh, God, Odin, Allah, and many others have had worshippers willing to die or go to war for them. When our emotions take control, we can convince ourselves of just about anything.

Our various cultures came up with gods and mythologies that suited their needs at a particular time, but some of us took them much too seriously. Now there are so many religions and so many sects all claiming to offer a message that is closest to what the gods really demand of us, that it is confusing. Are any of them worth devoting our lives to?

Could it be argued that we just did not know any better and religion was the best we could do in our formative years? We understand now that myths had their place in giving us answers when we had no other source to assuage our anxieties it took us a long time, but evidenced based scientific research now shows how to find the knowledge we sought so desperately. Myths gave us dubious answers to our existential questions about life. They are curiosities of our past that perhaps were helpful to our mental evolution, but perhaps not. Did we need all of those tyrannical gods and war heroes?

In one way, we can appreciate our various myths and creation stories that our cultures came up with. They gave us comfort when we needed comforting. Our ancestors, for example, had no way to know that the Earth and us are all products of gravity acting on the clusters of hydrogen floating around in space after the big bang...clusters that became star and galaxies.

Our myths, then, served as an interim catharsis for us between our years of not knowing but wanting to know our origins before the likes of Bacon, Copernicus, Galileo, Newton, and others began to show us a better way to learn about ourselves. In many cultures the gods lingered on, and in some they still linger. But in the last five centuries, we have been shown a much more reasonable and accurate method to define who we are. With the help of science and a new way of thinking about ourselves and our place in the vast universe, we are finally emerging from our myths into a greater reality.

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People have a love-hate relationship with the idea of obedience. Any community, large or small, must have laws that prohibit behavior that could be dangerous or detrimental to the well-being of the citizens. We need to obey laws that cover everything from driving a car too fast to theft and murder. A certain amount of obedience is good for a community and every citizen understands why it is necessary.

But perhaps the worst aspect of religion is that it admonishes us to learn to obey without thinking deeply about why we need to obey. Over the years we learned to obey not only religious leaders but also political leaders to the point that some of us gave up thinking for ourselves. As we began to come together in hunter-gatherer groups or small villages, we learned to obey the leader who often claimed to be the direct representative of the local deities or set of gods. And not many among us would have the courage to argue with a supernatural deity or its self-designated proxy. In the past and even today, many who try to break away from the dogma of the local religion have been accused of blasphemy and tortured, burned at the stake, hanged, decapitated, or at the very least, excommunicated. Religion can sometimes be very dangerous.

Thus, many of our ancestors learned the bad habit of blind obedience early and it has stuck with us. Our experiences with religion and repressive governments have taught us that it is the propensity to obey without question that our minds need to emerge from. But obeying, both voluntarily or being coerced, goes back thousands of years in our history and is so deeply ingrained in some of us today that many of us find it easier to obey than seek a valid reason for our obedience. It got to the point in many cultures, that when shamans, witch doctors, and priests claimed to have connections with the supernatural beings that controlled our well-being, we listened to them when they spoke and we offered our animals and sometimes even our children as sacrifices to the gods when priests told us that those jealous gods demanded our total obedience.

Then over the years as other religions and political hierarchies came along, the need to obey continued to be an important part of life. Even today, it seems as if some religions and political systems function only because people are willing to live by a set of dogmas or obey a leader who provides a modicum of comfort in terms of answers to profound questions and who promises each follower a happy and secure life. People are taught to accept the dogma of a religion or a political leader's directives and not to analyze them or argue about them.

The popular 1887 John H. Sammis Christian hymn tells us to "Trust and obey, for there's no other way." But, if you stop and think about it, there is another way. Instead of trusting and obeying the dogmas of a religion even though they may sound comforting, look deep into whether or not you are willing to turn against evidence-based facts in order to put your faith in myths and stories made up by men who were desperately seeking purpose and meaning in their lives and in the world. They gave us their opinions, but did they expect everyone else to believe them?

Without a doubt, some of the passages in the Christian bible are well written. The 13<sup>th</sup> chapter of Paul's letter to the Corinthians in the King James bible is beautiful prose with an uplifting message about love and charity. But it is verse 11 of the chapter that gets one to thinking beyond the initial message. It reads: "When I was a child, I spoke as a child, I understood as a child, I thought as a child; but when I became a man, I put away childish things." Whether Paul intended it or not, he is telling us to put away our childish beliefs in imagined supernatural deities and put our mental effort into learning about our world through evidence-based research. Replace your obedience with analysis and your faith with evidence-based research.

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It is unfortunate that in some cultures which have attempted to throw off the yoke of religion, the rulers have retained one of the worst aspects of it, and that is the admonishment to obey. In a few nations, the government leaders replaced religious leaders with a cadre of officials who demanded the same obedience as religious leaders, even to the point of death or imprisonment to those who voiced criticism of the government or its rulers. Replacing religion with worship of the state is certainly not an improvement. Obedience to a government or a dictatorial ruler is merely another way to give over your sovereignty as an individual human being. Your ability to choose your path in life is limited because someone else chooses it for you.

We have seen this, for example, in some communist nations. In these nations the rulers threw out the supernatural aspect of religion but held on to the part that demanded that the citizenry obey the laws, rules, and admonishments of the ruling political party. The situation sometimes becomes so extreme

that the head of the government has life or death power over the nation's citizens, much the same as some religious leaders had during the centuries of the European inquisitions. In a few nations today the situation has become so bad that entire nations have become de facto prisons with strictly guarded borders. The citizens must obey the directives of the paranoid ruler or be severely punished if they protest or try to escape. This is an example of governing by fear and it is not sustainable. Dictators remain in power only as long as they control their armed sycophants.

It should not be a crime for someone to seek a better life in another country. We are all different and should be allowed to live our lives as we see fit as long as we do not harm others. The idea of a nation that functions as a de facto prison that confines its citizens is abhorrent, especially a nation that tortures or executes people for merely seeking a less confined life.

Fortunately, we are in the process of emerging from this kind of irrational behavior to the point that the idea of separate nations probably will someday fade into history. Citizens of Earth should be able to intermingle freely without the need for national biases or boundaries. We do not need borders and the problems created by borders.

Certainly, governments are not inherently bad. We need them for such things as the building of roads, establishing school systems, protecting property rights and a number of other things necessary for a community to function properly. The idea of a social contract in which an individual gives up some individual rights in order that the community members can prosper together goes back to Thomas Hobbs, John Locke and beyond. Problems arise, however, when a government attempts to usurp more control than is necessary for the general well-being of the citizenry. Being a good citizen entails being not only kind and productive but vigilant as well.

We grow up learning to obey. It is necessary for a child to obey his or her parents in order to stay safe and healthy. It is when we become adults and have decisions to make about our future, that we can fall victim to dogma that looks attractive on the surface but might prove to be detrimental or even dangerous in the long term. For some of us it is easy to become a sycophant to a religious or political leader who seems to have easy answers to life's complex questions. Be leery of those who want to tell you how to think.

But the older we get, the more we realize that when someone says he or she has the absolute truth about how to live, we should not fall for such glib rhetoric. No one should admonish others to believe information not based on solid evidence backed up by verifiable research. Each one of us must find our own truth based on high moral and ethical principles. The word 'truth', like the word 'love', is often used in such a lax manner that it seems to have lost its meaning. Things that are true must be provable by strong evidence.

One is reminded of a verse in the book of John in the King James Christian bible when Jesus was being questioned by Pontius Pilate. Jesus said that "Everyone that is of the truth, heareth my voice." Pilate saith unto him, "What is truth?" This was a profound question for Pilate's day and for ours. Science can determine the truths of nature, but socially, philosophically, and theologically we are still asking ourselves, 'What is truth?'

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In today's world, all human truth starts with the premise that there are now over eight billion of us and we must interact with each other in a cooperative and productive way. That is a lot of individual personalities to directly or indirectly engage with, and each one should have the privilege to seek happiness in his or her own way as long as it does no harm to anyone else. Do not allow someone else to choose how you will live and do not coerce others to live as you want them to live. Try to be tolerant of others as long as they are not causing you harm or distress. As civil rights leader Martin Luther King warned: "We must learn to live together as brothers or perish together as fools."

Whatever your cultural, political, or religious point of view, allow your mind to be open but cautious. Listen to the proposals and schemes of people trying to persuade you to see their point of view but analyze their message carefully, especially if they are asking for your political or economic support. Trust is important in human relations, but unfortunately, it is easy to abuse. We have some good advice on the subject of trust from Willaim Shakespeare in his play "All's Well That Ends Well" when the Countess of Rousillon in act 1, scene1 tells her son Bertram to: "Love all, trust a few, do harm to none."

Although it is a noble aspiration that many religions advise us to do, so far, we humans have proven ourselves incapable of loving all. Fussing and squabbling seem at times our default mode of interaction. We can, however, love a few and trust a few. But in today's world, you need to think about who is trustworthy and who is not. The last bit of advice should be easy to follow. There is no need for anyone to harm anyone.

Know yourself well enough to trust yourself so that you do not allow yourself to be convinced of something before you have analyzed it closely. Keep in mind the good advice of physicist Richard Feynman: "The first principle is that you not fool yourself...and you are the easiest person to fool." Don't jump to conclusions just because something sounds good.

In his book, *The Grand Design*, Stephen Hawking wrote that: "Our perception – and hence the observations upon which our theories are based – is not direct, but rather shaped by a kind of lens, the interpretive structure of our brains." Sometimes we interpret things in a certain way because we want to interpret it that way. Our biases and preconceived notions sometimes prevent us from seeing an idea or someone's rhetoric in an objective way. We often fool ourselves by believing what we want to believe. Check the facts carefully.

Acquire analytic skills through reading or learning from others. Then let your mind emerge into something greater than the sum of the information that has come through your senses. Turn the sights, sounds, tastes, words, touches, and smells into insights that help you determine a reasoned and logical rationale and philosophy for your life, a strong inner philosophy that will ground you regardless of what external forces, human or natural, test your will or your integrity. And allow others to do the same. Understand that each of us sees things in slightly different ways based on our life experiences and biases. Be tolerant of other people's point of view unless it promotes divisiveness or could bring harm to others.

However, if it looks as if someone is intending to do harm to others, shun that person or do what you can to discourage the harmful behavior. Doing harm to others is what is keeping us from evolving to a higher level of humanity. Each of us needs to strive for a state of mind in which causing distress or harm to others ceases to be within our realm of thought.

Yet, it is hard in today's world to always shun or discourage people who intend to do harm to others simply because there seem to be so many of them with an uncaring mindset that makes them overly aggressive. But keep in mind, there are always more caring people than harmful ones. So, set your mind be open and friendly to everyone you meet or interact with. You will be pleasantly surprised at how positively people will react to you if you are kind to them first. Kindness is good for you and good for the other person. As the saying goes, a handshake will win many more friends than a clinched fist.

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It is unfortunate that there are still millions of people born into dictatorial cultures and nations around the world. They grow up in a situation in which they are forced to listen to the propaganda about how great their nation and their leaders are. Even if they do not believe all that they are told, they often have no way out. They must learn to like their confinement and become obedient sycophants because they have no choice. It is hard for their minds to emerge beyond what they are told to believe.

Some dictatorial nations are prime examples of replacing religion with government but not replacing the requirement of obedience. They have merely redirected the worship of gods to the worship of the supreme ruler. "Thy will be done" is replaced with "his or her will must be done".

Occasionally, a dictatorial ruler will bring up the threat of using nuclear weapons to achieve political goals. The nuclear weapons threat is possibly the worst and most short-sighted challenge ever faced by our species. Those who threaten the use of nuclear weapons are insanely desperate to get their way. It is as if they had rather die than negotiate. They are like moths that bang their heads into a lightbulb until they fall to the ground dead.

Of course, climate change is a serious problem that we need to be working on constantly. It is creeping up on us a bit each day. Hopefully we will adapt to it as it worsens since we don't seem to be making much headway in stopping it. But the nuclear threat is on us now. There are now enough nuclear weapons in the world to literally destroy much of our human civilization. Nuclear weapons are a product of World War II. They are deadly products of war that we must work hard to see that are never used again. Why have we put ourselves this close to the brink of mass suicide?

Greed and aggression have already replaced logic and reason in dominating the minds of a few government leaders. Never before have governments harbored enough deadly weapons to eliminate most if not all of the humans on Earth. Never before have so few controlled the life-or-death destiny of so many. It is discouraging that humanity has gotten to the point that a few irrational people can threaten the lives of millions of us. How did we allow this to happen?

This situation is pointing out without question the need for our minds to emerge from the perversity of fear, aggression, irrational nationalistic pride, as well as greed, lust for power, and the willingness to kill to achieve a political goal. Perhaps some will argue that it was these traits that built our flourishing global trade network. Yet, we see now that these traits are carrying us too far in a direction that is endangering our lives.

Unlike our material and physical emergence in which we retained our constituent parts and built upon them, our human mental emergence calls for discarding the traits that create discord while keeping the traits that help us be cooperative and kind to each other. It is important that we retain our sense of

morality, that we treat each other ethically, and that we use our power of reason instead of weapons. Our first emergence brought us life, our second emergence will prevent us from ending it.

Wars and crime are constant occurrences now. Conflict has become a way of life for many individuals as well as governments. Almost every day there is a new weapons system developed by some nation to protect itself from its belligerent neighbors. All of this killing power is manufactured in the name of national security, and we should be embarrassed as a species that we need that level of national security. Do we fear each other that much? Is irrational fear, distrust, and aggression the result of our millions of years of natural selection?

We continue building faster planes that carry more rockets, cannons that shoot bigger shells farther, aircraft carriers that carry more airplanes, tanks that travel faster and have bigger guns, etc., etc., so on and so on. Perhaps it sounds a bit trivial, but let us ask ourselves how much longer we can go on building one weapon system after another until some paranoid national leader goes too far? Would it take only one misguided missile to start a global confrontation? Are there rulers in the world now who would be so full of irrational pride and lust for power that he or she would start a conflict that could easily get out of control? We are humans. We need to stop acting like predatory hyenas.

We need to be careful. We need to be thoughtful and rational. To cope with armed individuals and armed nations, we need to closely analyze our actions and our motivations. We need to emerge from our past and current foibles. Our mental emergence will in time show us that we humans are smarter than we are acting at this time. But most of all, without a doubt, let us realize that we are wise enough to save ourselves from ourselves. Surely, we have enough sense not to stupidly blunder into unnecessary deadly conflict.

Keep in mind that our continued evolution is a symbiotic cooperative effort. Each individual is important and we need to work together, each doing her or his part for the common good of all. Symbiotic cooperation is what built our cells and our civilization, and it will bring us together to build a safe and peaceful world.

Yes, you are important in the on-going emergence of human intelligence. In 1859 in the book *Origin of the Species*, Charles Darwin wrote: "... species have changed and are still slowly changing by the preservation and accumulation of successive slight variations." Natural selection is still at work in our species. Our minds must change, adapt, and grow in wisdom.

Yes, you and all of us are still changing and evolving into a greater humanity. Look at yourself in the mirror. The person you see has the ability to bring people together and make the world a safer, more human place. Emerge from your past and look to your future.

Ted McCormack