First, this is an essay, not a paper. I do not claim to be an academic, nor do I pretend to densely footnote my work. It is a flight of fancy triggered by the references at the end, supplemented by 60 some years of thinking and argumentation.

This essay should also be a full book, not a short overview, but I only have time for an essay.

This is a proposal for a Cosmotic Imperative, which includes an Ethical Imperative, as well. By this I mean, ethics is a fundamental property of the Cosmos and violating ethics is a sin against the Cosmos.

The Cosmotic Imperative says that the totality of everything there is in the Cosmos is moving towards entropy. Entropy is defined for the purposes of this essay as energy at zero potential.

Also as part of this essay, I am proposing a reformulation of the theory of evolution that has more explanatory power than the one proposed by Darwin. I make three general proposals.

1. Evolution has a direction.
2. Evolution has a goal.
3. Evolution is not intentional

This essay is in direct counterpoint to a theistic/deistic creation of the Cosmos. My position is that we do not need a God to create the Cosmos. Further, we do not need a God for ethics. This raises an interesting question, does ethics need an enforcement framework to be ethics? What would happen if we lived in a Cosmos that only rewards doing the right thing. If doing the right thing for the right reason was its own reward, would that be enough to make people be ethical?

My proposal starts with the idea that everything in the Cosmos as we know it started with the Big Bang. The Big Bang was an extreme concentration of energy. There are many different theories about how the Big Bang occurred, from particle - anti-particle spontaneous creation in which the anti-matter particle moved into a different Cosmos, to random quantum fluctuations in an unknown vacuum. No matter which theory people choose, there is in general an agreement that there was a Big Bang and it involved a tremendous concentration of energy.

This raises the issue of what is energy. The easy answer is that energy is the only ingredient in the Cosmos. From this point of view matter is just energy moving slower than the speed of light. This is one view of the famous Einstein equation, $E=MC^2$. In any concentration of energy, the energy wants to move from an area of high potential to an area of low potential, the Second Law of Thermodynamics. The ideal for an energetic system is to move to complete entropy, which is zero potential. In our present understanding of temperature, this would be a Cosmos at absolute zero. (Which, by the way, may be a violation of the 3rd Law of Thermodynamics, but I do not understand it well enough to defend it).At the present time scientists believe that our Cosmos is about 3° above Zero.

At the Big Bang, the energy was so concentrated that it violently moved toward entropy in a process called inflation, thereby creating what we call space. It may be, in fact, that space is still being created. This would be the cosmological constant of Albert Einstein or the recent discovery that the universe continues to expand at a faster and faster rate.

My proposal is that evolution does not start here on earth with the creation of life, but that evolution is a process that begins with the very creation of the Cosmos in the Big Bang. One thing that scientists seem to agree on is that the initial Big Bang was not uniform. The reasons for the non-uniformity are still under debate and range from quantum variation, sound waves, possibly some sort of matter -

antimatter interaction. We do not exactly know why there was a fluctuation, but we do know from examination of the cosmic background radiation that those fluctuations did exist. From my perspective the results of this non-uniform expansion led to evolution. Evolution is described as the creative process of the Cosmos that creates the most entropy in the most efficient manner and is not limited to life.

Apparently something on the order of 99.9% of all energy in the initial Big Bang went directly out into the Cosmos into the newly created space as it moved towards entropy. However, some energy began to stack up in these fluctuations where it apparently began to create a gravitational field that attracted more and more energy. The gravity apparently bent space enough that these accumulations of energy began to concentrate. As that energy began to concentrate, it began to push in all directions in the drive for entropy. The energy that was captured by the bending of space from the initial fluctuations also is moving as quickly as it can to entropy, but in the regions confined by gravity. One way to think of it is that energy is like a river that is moving to its lowest gravitational existence, usually the ocean. The river pushes on all sides of its bank and to some degree even upward towards the atmosphere. If we think of the concentrations of energy as a dam, the river would be pushing at the dam equally along all surfaces, looking for a weak spot to push through. Energy will take every possible path to move towards entropy.

This movement towards entropy by the concentrated energy leads to two phenomenon that are associated with evolution, and indeed, are evolution. Those two conditions are complexity and emergent properties. Complexity is defined as a combination of two or more subunits. Emergent properties are defined as properties of a complex system that cannot be predicted from the knowledge of the constituent parts. In other words, a reductionist examination of a complex system cannot, itself, account for that system. So, from this point of view, as energy concentrated into what we call matter, it first became quarks. These quarks then formed into elementary particles. There is no way to predict from the knowledge of quarks that they would fit together into particles. Similarly, there is no way from the knowledge of particles that one could predict they would form atoms. Similarly, there was no way from a knowledge of atomic hydrogen that one could predict that hydrogen, attracted by the forces of gravity, would collapse into something that we call the star. At each step, energy in its move towards entropy has created complexity that has emergent properties unpredictable from a knowledge of the constituent parts.

These stars, as part of their changing complexity, pull inward with gravity and outward with the force of the burning hydrogen. At some point, the internal burning is not strong enough to counter the inward force of gravity, and the star implodes, then explodes. That explosion creates all of the naturally occurring elements that we see in the universe today. Further, the gas and elements thrown out from the star form huge clouds that are again contracted by gravity, and form another generation of stars. Only this time, the stars formed from the remains of these exploded stars form a disk of gas from the heavier elements created in the explosion of the previous star. The new star holds the disk around it, and in that disk the heavier elements collect together through gravity to form what we call planets. As far as we can tell, looking into all directions in the Cosmos, this appears to be a fundamental property. While at one time astronomers struggled to find planets, now it is hard not to find planets, some of them rocky like our earth. From the point of view of my argument, these bodies are an outcome of the creative nature of the Cosmos as energy takes all possible paths to entropy.

To describe this evolutionary process, we use words like time. Time, measured by humans as the repetition of the earth in its orbit around our star, the sun, can be used to measure the evolutionary creative processes. For instance, it appears that the Cosmos is about 14 billion years old. It appears that

our Sun and its planets are 4.5 billion years old. Amazingly, it appears that life is 3.8 billion years old, which means it must have started on earth as soon as conditions allowed life to form and much closer to the beginning of our solar system than previously thought.

Complexity is the inevitable process created by the Cosmos. Why should energy moving towards entropy create complexity? If we think of the flow of energy as moving from a higher potential to a lower potential we see that that is the definition of work. Complexity increases entropy through its emergent properties by doing work, which is moving energy from a higher potential to a lower potential as it moves towards zero potential, entropy.

How much energy is in an energy flow?. Astronomer Eric Chaisson has proposed that an energy flow of 1 is equal to 1 erg/gram/second. This would mean that freely flowing energy from the Big Bang has an energy flow of 1, because it is running straight to entropy. Energy that is concentrated and has a higher potential, seeks out higher energy flows as it runs to entropy. By Chaisson's estimation, the star has an energy flow of 2, meaning 2 ergs per second per gram of energy flow. A planet has energy flow of 75. This is because of the tidal forces on the planet, its interior cooling as radioactive decay melts rock and moves the surface of the planet. The planet complexity gives rise to emergent properties that do work. A simple organism has an energy flow of 900, because the complexity of that organism is doing work, moving energy from a higher potential to lower potential thereby creating an energy flow of 900. A simple primate has an energy flow of 20,000. Again, this is because the complexity of the primate which allows it to do work. Human culture has a possible energy flow of 500,000 as we move planet wide energy sources towards entropy.

The Entropic Story of Life on Earth

Life apparently arose very quickly in the history of the earth. As soon as the Earth was cold enough for the formation of life, life formed. From the point of view of this essay, the formation of life is no different than the formation of stars, hydrogen, particles, or quarks. Life is part of the fundamental creative evolutionary process of the Cosmos. Life on the earth most likely rose in the deep ocean trenches where it used heat and chemicals as a way to organize complexity and its emergent properties that created energy flows in the process of work. Life moved energy from a higher potential energy to a lower energy state on its way to entropy. If we think of the early ocean as a sort of soup, amino acids and enzymes in that soup did work in that by their arrangement, rearrangement, and destruction, they take energy from a higher potential to lower potential. These amino acids and enzymes continually formed and broke apart under the onslaught of chemical bombardment from other chemicals in the soup.

Naturally occurring lipid permeable spheres were also present in this soup. Chemicals going inside the spheres lasted longer, thereby creating more entropy, and thereby creating a higher energy flow. This energy flow into the complexity of the amino acids and enzymes inside a lipid increased the complexity with its emergent properties, which increased the move of energy towards entropy and increased the energy flowing through it in a positive feedback loop.

Inside the sphere complexity continued to increase. Some of the chemicals began to specialize in just one of the many chemical processes needed to promote the complexity and emergent properties. These different specialized chemicals provided products that other enzymes needed in the emergent positive feedback system inside the sphere. Some of these enzymes plugged the holes, which isolated the interior, providing protection for the other enzymes inside of it. This is an example of how cooperation and coordination increases complexity and emergent properties for life. Eventually the chemicals began

to store information from their experiences in specialization and then began to reproduce by basically breaking in half. Each of the daughters carried that same stored information. This guaranteed that each of the daughter cells would have at least equal complexity, and therefore equal energy flow. Each generation at least doubled the energy flow, because there were now twice as many. This energy flow drove more complexity which moved more energy towards entropy.

Some people object to this particular point of view because they claim it violates thermodynamics. In fact, thermodynamics, which says that energy wants to move towards entropy, is validated by this point. Life itself is a complexity created by the energy of the Cosmos on its drive to reach entropy. This creative process of complexity is evolution.

Evolution spread from what we called matter to life 3.8 billion years ago. The emergent property of this complexity, life, does more work, moves more energy to entropy than just a collection of the molecules of chemicals from which it is composed. It is not the fittest and most adaptive that survives in an environment, but the form that has the highest energy flow. The form that creates the most entropy through complexity and emergent properties will be the form that receives more energy density and energy flow because energy, pushing against every possible path towards entropy, will flow to the complexity that is creating the most entropy most efficiently.

From this point of view cooperation increases complexity, whether it is at the chemical level, the cellular level, or at the cultural level. Each increase in complexity from the cooperation of the lower subunits creates new emergent properties and those new emergent properties create new energy flows to entropy. If a new cooperative venture of subunits does not lead to higher complexity, it does not get the energy flow, and it goes away. If a cooperative group remains the same and does not cooperate with a higher grouping to create more complexity, then it can remain in basically the same level of energy flow, as long as there is not other alternatives for energy to seek as it moves towards entropy.

Cells have cooperated for a very long time. In cells we see the organelles, which apparently were other organisms at one time. We see mitochondria, the energy factories of the cell, which apparently were a different organism at another time. The nucleus of the cell itself appears to be a totally different organism that shared the safety of its inner envelope, thereby increasing complexity, thereby increasing energy flow, and thereby evolving.

The nucleus, which is the defining characteristic of eukaryotes, apparently formed about 1.6 billion years ago. Some biologists believe the nucleus formed by the folding of the cell during division. Others propose that is was at one time a virus. However the nucleus evolved, it resulted in a safe area inside the cell. The nucleus also allowed the preservation of information, one of the characteristics of complexity, in such a safe and protected environment that the information, along with new information, could be carried forward into the daughter cells. This information allows the daughter cells to “learn” how to construct complexity to increase energy flows.

Then 1.5 billion years ago, a blink in time from the formation of the eukaryotes, sexual reproduction appears. Sexual reproduction so radically raised complexity and thereby raised energy flows that it is one of the most common characteristics of life on earth, at least complex life on earth. We also see around this time the invention of symbiosis. In symbiosis two forms of life come together to work in a manner that the complexity benefits both members and creates even higher levels of emergent properties which do more work in creating more entropy.

This symbiosis experiment resulted in multicelled life about 700 million years ago. This allowed for

new forms of complexity which allowed for new levels of emergent properties. This complexity dramatically increased the energy density for multicelled life. As long as the member cells cooperated, they increased the complexity and therefore the energy flow for the entire organism. If, however, for whatever reason the cells in the multicellular organism did not cooperate, complexity did not occur, then emergent property did not occur, resulting in no energy flow, and the organism went away.

Just as chemicals in the early cell began to specialize in such a way that they increased complexity and emergent properties, cells in these new multicelled organisms also specialized. Some cells specialized to be on the inside, some cells specialized to be on the outside. These specializations, experiments in complexity and emergent properties, led to what we call now the Cambrian Revolution. During this explosion of lifeforms, every single life plan that exists today came to be in a relatively short period of time. This includes the evolution of a vertebrate complexity which has very high emergent properties and thus very high energy density. A cooperative venture of those multicelled animals now had the potential to do a lot of work, moving energy from a higher potential to a lower potential. As these multicelled life experiments continued, emergent properties competed for energy flow. When the energy flow increased for some of these experiments, they became what we call adaptive, and experiment continued to evolve. Experiments in complexity that were not successful in creating energy density became what we call extinct.

Therefore, this essay proposes that evolution be redefined. Evolution is not adaptation to the environment. Evolution is an increase in entropy through complexity and emergent properties. Species that maximize complexity and increase energy flows through their emergent properties in their environment are the ones that we call adaptive. It is the increase in entropy that makes them successful, not necessarily their adaption in the environment. The selection criteria for evolution, from this point of view, is the efficiency of entropy creation. The organisms that are more efficient in creating entropy are the most likely to survive. It is important to note that this is not an intentional or an intelligent selection, but the product of chance mutations in the environment. It also was not part of a long-term plan but the immediate experience of that organism in the environment. The theory of punctuated equilibrium notes that organisms can exist at the same level of complexity for a very long time until through some genetic mutation or a change in energy availability in the environment a new level of complexity occurs and with it a higher level of emergent property which increases the efficiency of an organism to create entropy and suddenly that organism becomes dominant.

Evolution has a direction. Evolution moves towards complexity because energy flows to the most complexity in its endless move towards entropy. It is not intentional. Energy does not care how it gets to entropy, only that it wants to take the most efficient path. The complexity and emergent properties that create this most efficient path are the ones that get the energy flow, and the ones that we called adaptive.

This point of view answers one of the more difficult questions in evolution. Nothing in evolutionary theory explains the “drive” for survival. Why do organisms want to survive? To say that life just does seems to beg the question. However, if the drive of energy density to move to entropy is the force behind evolution, organizations that have complexity are driven by the energy flow to continue to build entropy. It is not the individual organism that wants to survive, but the force of energy moving to entropy through its complexity that drives what looks to us like survival.

This leads to another interesting point about evolutionary challenges. Why is there death? If we look around at all species on earth, we can see that death is the most common adaptation. As far as we know, all organisms die. If we believe that all behaviors that are adaptive survive, then from the point of view

of evolution, death should be highly adaptive. If we look at evolution from the point of view of energy flow towards entropy, an organism that is no longer efficient at creating entropy does not receive the energy flows, and thus no longer serves the purpose of entropy, and eventually goes away. In other words, the work machine that is the complexity of the organism simply wears out from performing so much work. At some point, it takes more resources to repair the machine so that it continues to be efficient than if a new machine is constructed. The old one goes away. In short, the worn-out machines get out of the way of new machines that are the most efficient at creating entropy. Sentimentalism that says we should stay alive longer has no place in an entropic flow. Get out of the way and allow the new machines in. If stars have to die, why should humans be different?

From the point of view of entropy, there are other limits to adaptation and environment. One limit appears to be the amount of energy that can be moved towards entropy. When all the energy in the environment is being moved as efficiently as possible to entropy, then one would predict that there would be no more evolution in that environment. In other words, the maximum amount of energy that can move to entropy is being moved. An organism in that environment, if it is to increase its energy density, has only two choices. An organism can get more energy, perhaps by tapping a different source of energy than that presently being used. Or it can get another organism's energy by out competing it.

In the early world of life, photosynthesis seems to be an example of the first form. Collecting light energy from the sun and transforming it through work into some form of matter, proved to be a way for organisms to dramatically increase their energy flows compared to the organisms that had to rely on chemical soup. Complexity increased to create more and more elaborate tricks to capture sunlight and take it from the higher energy to a lower energy, thus moving it towards entropy. Some of these photosynthetic plants engaged in a symbiotic relationship with other organisms that do not depend on light, but that could provide safety or nutrients that increased the complexity and the energy flow. Lichens and coral are just two examples of this sort of symbiosis.

An example of the second option to increase energy density in a constant energy environment is predation. Predators harvest the storage capabilities of other organisms. By consuming organisms that have already engaged in gathering energy before moving it towards entropy, the predators greatly increase the energy density that flows through them.

Another example of the second form of gathering energy is husbandry. Husbandry, unlike predation, involves harvesting energy from an organism while providing it some benefit. An example might be ants caring for, and harvesting, a fungi.

Basically all life, including us, is a cooperative venture. All our cells contain all the information we have about our complexity and our emergent properties, but yet each has a specialized function. As such, our cooperative bodies demand that the cells must communicate in some way to make that cooperative venture work, in order to increase complexity and our emergent properties. We know that cells communicate chemically, and there is some evidence to show that they communicate through electrical connections, and a new discovery of tunneling nanotubes seems to indicate direct physical contact. This cooperation leads to complexity and emergent properties that increase energy flows. Noncooperation destroys itself eventually. The diseases of mankind are basically the diseases of uncooperative cells. Sometimes cells become uncooperative on the own, as in cancer. Sometimes they become uncooperative because of invasion by a toxic force, including other predatory species.

Humans and their evolution are no different than any other complexity moving towards emergent properties, whether it is quarks moving to particles, particles to atoms, atoms to elements, and so forth.

One advantage of humans is that we are social animals which allow us to create new levels of cooperation and complexity. Like the cells of our bodies, humans specialize as they contribute to the larger emergent properties of our social group. In fact, much human complexity and emergent properties are stored outside of the organism through our culture. We know that most social animals, especially primates, also have cultures. But clearly the human culture has reached a level of emergent properties that has created incredible energy density that moves huge amounts of energy from potential towards entropy. Consider human language. It is a storage scheme that does not need physical restraints. We use myths and stories to communicate information about past experiences rather than relying solely on the transmission of DNA. It appears our brain has evolved to store, remember, and re-experience these stories and myths. The level of complexity that drives the emergent properties of human culture has created one of the greatest energy flows that we are aware of.

But humans were not always the greatest entropy creators. Apparently at some time in our history, there may have been as few as a few thousand humans on the face of the earth. What drove us to become the dominant animal is that we began to form larger and larger social groups. those social groups have emergent properties which created greater and greater density flows, which made us become what we call adaptive.

Humans are biologically wired to use social cooperative structures to increase complexity and emergent properties. There are wired into humans brains ethical emotions and inclinations. Those ethical emotions and inclinations increase the social cooperative behaviors, thereby increasing complexity and emergent properties. People who lack those wired in ethical emotions are considered antisocial and are frequently destructive of that cooperation. The interference of anti-cooperation, as in any other organism, limits the emergent properties and destroys or at the least disrupts complexity. Ethics is the organizing principle of cooperation in human social groups. We are most ethical when we are being most cooperative.

One of the features of human complexity is what we call self awareness. This is awareness that our human nature includes moving beyond just our physical constraints. We can sense, if not understand, that we are the energy that is moving towards entropy. We appear to be physical, but in fact we are just energy moving slower than the speed of light trying to move towards absolute zero energy, which is entropy. Humans are part of an emergent property of complexity when we join in a community. That community may be as small as a family, or it may be a medium-size religion, or a state or nation. It is a common experience of humans in large social groups to feel the energy density. For instance, at a large sporting event such as a football game, we participate in the expenditure of tremendous emotional energy. We say we “feel” the momentum. We “feel” the excitement. We “feel” the thrill of victory and the agony of defeat.

Movies we have seen of Adolph Hitler exhorting the mass of German people is both wondrous and terrifying. What is exhibited is some of the force of the social group. That expended energy is moving energy from a higher state of potential to lower state, and the crowd experiences the energy flow. In that sense, humans can see how our social organization actually is contributing to that energy flow.

There is also what humans perceive as a positive energy experience, the rewarding emotions that come from cooperating to reach a goal. When a team, whether of sports, work, or military, reaches a peak of cooperation, we call it “flow” because that is what it feels like. When a group of religious participants engage in a cooperative exercise, participants feel a power flow they call spiritual. Humans have some sort of common experience when they socially cooperate.

If somebody frustrates that cooperation, they are no different in the social group than a cancer is in a human body. If someone invades a social group to disrupt its energy, it is no different than a cellular invader who creates a chemical breakdown. They violate the Cosmetic Imperative of moving energy most efficiently to entropy. In that sense a person who frustrates the cooperation of the group creates a sin against the Cosmos. But unlike a sin in a religious sense, there is no punishment, just a frustration of the Cosmotic Imperative.

Human society by itself has all the elements of a complex cooperative emergent organism. This social grouping rose to minor prominence as predator and gatherer cultural groups 1 million years ago or so. Human society moved to husbandry approximately 10,000 years ago. We developed a great agricultural civilizations starting about 5000 years ago. Agriculture was a massive step on the way to creating more complexity and more emergent properties. These great sedentary cultures allowed individual humans to spend more time and energy developing the emergent properties of humanity. Individuals specialized more and more, like the first chemicals in the first cells. As more and more social roles opened, more and more people filled them. In just a very short period of time, perhaps the last 300 years, humans have filled every biological niche. Humans have turned more energy towards entropy than any other species. Humans have exploited and controlled more of the earth's energy than any organic species and possibly more than all the other species put together. Humans have modified the entire chemical makeup of the planet. Humans have even found a way to tap past energy that is locked up in historical layers by the use of fossil fuels.

Evolution is not necessarily good for the organisms that are evolving. From this point of view, increasing the energy flow for a species does not mean individuals or even the species itself will fare well. Sedentary life certainly has not proven good for humans, although it is good for complexity and emergent properties and it does increase entropy. This drive to create entropy in part lies behind the intense urbanization of modern cultures. Humans move to urban areas not because it is good for us, but because we increase entropy. We know that sedentary society has severe health consequences for individual humans. From the time of the earliest agrarian societies, we see starvation, various forms of nutritional deprivation such as in protein deficiency, and infectious diseases that rely on humans staying in close proximity. In our modern day culture we talk about an epidemic of obesity, or heart disease, or other easily preventable diseases. All this individual destruction is easily avoided if we would only exercise, but it is the sedentary that serves entropy and the Cosmotic Imperative.

Evolution does not work for us as individual members, evolution only wants to increase entropy. In terms of human beings these increased energy flows can be extremely harmful. On a biological level we see things such as cancer, infection, violence, crime, and aggression afflicting us as a society as well as individuals. The traits that served us so well when we lived in small hunter–gatherer groups do not work so well for individuals in large social settings.

The blind rush to entropy by evolution can actually destroy human civilization. Since energy rushes to the most efficient path to entropy, two options are possible; fast and quick or long and slow. Evolution is unthinking and does not care about the consequences of the path it takes, as long as the path leads to entropy.

One of the fastest paths to entropy is war. The organized destruction that large social groups can inflict on each other as well as innocent bystanders dramatically increase entropy. This is an example of large amounts of energy in a short amount of time. The energy flows can be substantial, and thus it is not an accident or coincidence that humans and warfare evolved side-by-side with agricultural sedentary cultures. They are both outcomes of the drive for entropy.

Similarly, ecological damage increases entropy in the fast and quick manner. Destroying huge swaths of forests, tearing up topsoil, forcing species into extinction automatically increases entropy for the short term. Ripping the top off a mountain and then burning the contents is a very efficient way to increase entropy over the short term.

There is a second highly efficient way to create entropy, and that is long and slow. Short-term entropy creation, such as the entropic flow of destruction in war, does not equal the long-term entropic contribution if there was no war. In other words, if humans had continued to evolve without the forces of World War II, the total amount of entropy created in the European cultures would, by now, have vastly exceeded the entropy created by the war. But evolution is not a thoughtful or intentional process. It follow the most efficient path, which sadly is the most destructive.

This is precisely where the human ethical sense must be called into action. Because humans are self-aware, and because humans have, in a very real sense, control over their own evolution, we must use our sense of the Cosmotic Imperative in the most constructive way. By Cosmotic Imperative and conscious evolution I mean that humans determine how much entropy is really necessary at present, and how the highest level of entropy can be created over the long term through the judicious use of resources and human relationships. My proposal is that over the life of the planet, far more energy can be moved to entropy by the persistent and efficient efforts of humans, than by suddenly blowing it all up. My proposal is that the most ethical response is the long-term maximization of entropy rather than the short-term and dramatic increase in entropy that comes from our ecological destruction.

My proposal for ethical evolution is this:
To create the maximum amount of entropy possible over time.

The proposals made here are not really new. Can it be simply a coincidence that every religious tradition teaches in some way that there are energy flows? Humans feel those energy flows, however they mythically account for them. Some esoteric religions deal almost exclusively with energy flows and managing them. Human states harness energy flows to accomplish their narrow political gains through such phenomenon as charisma, nationalism, and patriotism or even worse, militarism. I would guess that all human beings have felt the energy flow. The effect is felt when one is cheering for their favorite team, engaging in some family activity, participating in a community event. Listening to an effective charismatic speaker triggers inside of us a feeling or emotion that is actively moving energy from a higher state to a lower state, creating entropy.

The mistake that we can make as a culture is using short term entropy rather than long term entropy. The Cosmos itself does not care. Evolution is only interested in moving energy flow in the most efficient manner that it can find. Because evolution does not have intentionality or intelligence, and lacks a long view, it will move whereever it can go through. This includes war and environmental destruction.

Ethics creates a long-term movement to entropy in which entropy is maximized in the total effort. This means that the total entropy of a system is maximized for however long it takes to move the entire energy of the system to entropy. From this perspective, ethics includes respecting the efforts of other species in creating entropy, rather than trying to steal the energy from them. Conservation is just not a nice idea, but it is a human answer to the Cosmotic Imperative. By enlisting as many species as possible in the conversion of higher potential energy to lower potential energy we are answering the Cosmotic Imperative.

Ethics requires the maximum amount of cooperation to create the maximum amount of complexity to create the maximum amount of emergent properties that creates the maximum amount of long-term entropy. This leads us to the possibility of a new emergent property. From this perspective an entirely cooperative planet that maximizes long-term complexity would be the most complete answer to the Cosmotic Imperative. From this point of view ethics is highly entropic because it moves the maximum amount of energy to entropy.

Only humans are capable of constructing a long-term answer to the Cosmotic Imperative, and thus, we have the evolutionary responsibility to carry it out.

My inspirations:

Reinventing the Sacred, Stuart Kauffman
A Brief History of Everything, Bill Bryson
Big History, David Christian (Teaching Company)
Primates and Philosophers, Frans deWaals
Age of Empathy, Frans deWaals
Biology and Human Behavior, Robert Sapolski (Teaching Company)