

The Hidden Alpha

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There have been proposed numerous resolutions by both academic and independent researchers to the grand question of why there isn't hard evidence of the existence of extraterrestrial intelligence. The remarkable uniformity of the Universe supposes sustaining of a myriad of advanced space civilizations. The great number of proposed hypotheses which are flooding the pages of books, magazines, academic journals, newspapers, and the Internet indicate that there is still no satisfactory explanation of this major riddle.

INTRODUCTION: FERMI PARADOX

Enrico Fermi was a major player in the Manhattan Project for producing the first atomic bomb. A team of scientists led by Enrico Fermi, Edward Teller, and J. Robert Oppenheimer developed a nuclear explosive device, and in 1945, south of Albuquerque, New Mexico, was successfully tested the first atomic bomb. The Nuclear Age had begun.

After the war, the United States and the Soviet Union captured many V-2s and used them in the research and development of their intercontinental ballistic missiles, capable of delivering nuclear arms at ranges of thousands of miles.

With these new technologies space exploration was already feasible and imminent. On October 4, 1957, the Soviet Union launched the world's first artificial satellite, Sputnik 1. The Space Age had begun.

In the summer of 1947 in New Mexico, the famous Roswell crash incident occurred. Unusual debris from a downed object, supposedly an alien spaceship, was found on a ranch.

The press made a big fuss. The imagination of the public was already prepared for extraterrestrial spacecrafts due to the pulp science fiction magazines; some of them had huge print runs for the time. On the pages of numerous publications all kind of space civilizations were fighting.

Many ordinary people also believed in aliens. In 1938, a radio play based on a version of the science fiction novel *War of the Worlds* by H.G. Wells announced an assault on New Jersey by hostile Martian invaders. Thousands of panicked people in New York and New Jersey—not realizing that they were listening to a radio play and the announcements were only a simulation—fled their homes, creating traffic jams in order to avoid imminent gas attack by the Martians. Dozens of them were sent to the hospital for shock, hysteria, and injuries.

The U.S. authorities were very concerned about the Roswell crash and the many flying saucer reports. What were they: Soviet new generation aircrafts spying around the American nuclear secrets, escaped Nazis with their secret flying saucers looking for revenge, alien space ships?

In 1950, President Truman approved the thermonuclear bomb project. A group of physicists, most veterans of the Manhattan Project, reassembled at Los Alamos, New Mexico.

During the lunches Enrico Fermi loved to ponder scientific questions. The Roswell crash and the flying saucer sightings were discussed as well.

The story goes that Fermi formulated his famous paradox in the summer of 1950 or 1951 during a luncheon conversation with Edward Teller, Emil Konopinski, Herbert York, and other companions.

Later, Edward Teller—participant in the production of the first atomic bomb, and subsequently known as the “father of the hydrogen bomb”—remembers that the conversation was only vaguely connected with astronautics.

After the luncheon the talk continued. Teller recalls that the discussion had nothing to do with astronomy or extraterrestrial beings, but was some down-to-earth topic. In the middle of the conversation, Fermi asked quite unexpectedly, "Where is everybody?" The result of his question was general laughter, but everyone around the table seemed to understand that he was talking about extraterrestrial people.

Pondering the alien hypothesis, Enrico Fermi—one of the chief architects of the nuclear age and a well trained scientific mind (Nobel Prize winner)—reasoned that all technological civilizations will discover nuclear reactions, and with rockets based on this relatively simple technology, they could travel across interstellar distances at 10 percent of the speed of light; thus,

the space civilizations could theoretically colonize our Galaxy. So, if there are extraterrestrials, why haven't they come to Earth? "Where are they?"

Enrico Fermi was the first one who formulated the notion that if there are much older civilizations in our Universe, they should already be on our planet, too.

Here is a list of hypotheses explaining the Fermi paradox:

1. Most intelligent species have a very short existence period because they develop self-destructive technologies and inevitably kill themselves;
2. Humans are the first or the only sentient beings in our Universe;
- 3 We are protected species in a cosmic zoo or sanctuary; we live in some sort of artificial planetarium, simulation, or cosmic nursery;
4. The aliens are not interested in space traveling and communication;
5. Singularity or transcendent hypothesis states that mature species move to another plane of being or into another dimension;
6. Interstellar travel is impossible;
7. Catastrophic galactic and planetary events are so common that complex life rarely has the time to evolve; for example, powerful gamma-ray bursts periodically sterilize the galaxies;
8. The extraterrestrials are here, but they are hiding;
9. The Universe and the mature civilizations are quite different than we can imagine;
11. The Universe is filled with killer robots (berserkers) looking for life to destroy it;
12. Rare Earth hypothesis states that Earth is unique and complex life is uncommon in the Universe;
13. Interstellar travel is very slow, too costly, and technologically complicated, which is why extraterrestrial civilizations still haven't reached us;
14. Only a few civilizations develop science and technologies enabling them to travel into space;
15. Advanced civilizations have strong ethical codes against interfering with primitive creatures like us;
16. The other alien races have become energy blobs;

17. The advanced space civilizations communicate with some unknown form of radiation that is non-electromagnetic or are using a communication technology based on principles of physics of the future;

18. The aliens have moved somewhere, shielded from us;

19. Alien civilizations prefer to study Earth and humans via nanomachines;

20. The Solar system is located in the less desirable geographic region of the Galaxy;

21. The aliens run out of resources.

There is still no truly satisfying theory explaining the obvious absence of hard evidence of extraterrestrial civilizations.

Pondering the Fermi paradox, the true question is why they haven't arrived on Earth and why they don't roam the Galaxy, because for advanced civilizations, which are millions of years ahead of us, there wouldn't be any technological problem to travel across space. Why we can't detect alien signals or radio leakage (called also the Great Silence) is a secondary question, not the main one.

The proposed hypotheses suppose that intelligent species are emerging at a constant rate, which seems quite reasonable, because there are billions of stars much older than our Sun, and they could have Earth-like planets able to sustain life.

The popular equation, formulated by Frank Drake in 1961, has seven multiplicative factors (yearly rate of star formation within the Galaxy, percentage of stars with planets, number of planets suitable for origin of life, fraction of planets with life, proportion of planets on which intelligent life evolved, fraction of planets with civilizations capable of interstellar communication, longevity of the technological phase of such civilizations), which estimate the number of the supposed civilizations in our Galaxy, the Milky Way.

Since the estimates for each of the seven factors can vary widely, the ET buffs often formulate a very large number of extraterrestrial sentient species, but for the skeptics (most of the scholars believe that skepticism is at the heart of science), it is equally easy to calculate a very small number of alien civilizations.

The Drake equation also supposes that space intelligences arise at a constant rate because stars are forming continuously, and many of them have planets which are capable of sustaining life and can develop sentient beings. But where are these older civilizations?

EQUAL START HYPOTHESIS

However, if we assume that for some reason the space civilizations in our Universe started at about the same time, we get a very elegant resolution to the Fermi paradox: the Universe is teeming with living beings, but being at almost the same level of development, most of the numerous intelligent races still haven't contacted or haven't found evidence of existence of other advanced creatures. They, just like humans, are making their first steps into deep space. The leading intelligences already travel across the neighborhood of their star system, but they are facing a lot of problems: financial, biological, technological, and so on, limiting their space expansion activities.

What could be the reason for such an equal start of intelligence?

All life in our Universe is based on hard competition in order for Nature to accelerate evolution, thus providing (bio)diversity, quality, and quantities of civilizations. The intelligent races in space can compete, cooperate, and progress successfully only if they are at about the same level of development. The later-emerging civilizations could hardly survive real competition with sentient beings which are millions of years ahead of them.

Accurate timing is of crucial importance for complex systems, because instead of universe filled to the brim with fit intelligent races, there could be only one or a few of them which would never reach the high level of development than in the case of legion hard-competing civilizations.

The equal start hypothesis supposes a factor or factors providing such an equal start. It could be something that “forbids” the emergence of sophisticated life before a certain point in time, like frequent gamma-ray explosions or other devastating events on a universal scale.

But there is also a more complex explanation. There are clues and evidence that life in our Universe is orchestrated.

The idea that the cosmos was invented by some creative conscious artificer is very ancient. Hindu tradition sees the Universe as a vast dream of God who is playing with the world and its inhabitants. Throughout human history were created varied images of God(s)—as shepherd, ruler, father, alien visitor, dreamer, craftsman, playing child, dancer, old wise man, supernatural being, harsh demiurge, and so on. An a priori argument for the existence of God is

asserting that as existence is perfection through evolution, and God inevitably is the most perfect being, it follows that God must exist. He is the Supreme Being, ergo the Supreme Ruler.

For most of today's scholars God is an unnecessary hypothesis.

There are modern scientific theories, hypotheses, and present-day myths (in some cases science, myth, and religion are mixed up) which claim that the world is ruled by supreme alien races, some sort of artificial intelligence or supercomputer, (living) intelligent fields, creative conscious energy, the Earth itself is conscious, and so forth. Rupert Sheldrake asserts that morphic resonances influence and control everything in the Universe. A morphic field is a field of pattern, order, form, or structure, organizing the forms and the development of living organisms, atoms, molecules, and all the rest.

But for now, there are only three primary groups of plausible theories on that controversial subject—Genesis and Control of Universe and Intelligence:

1. A supreme agent (consciousness, intelligence, some kind of force, or sentient being—natural or artificial) created the Universe through manipulation of physical matter and energy, and it is still in control. That external agency is assisting the development of life and intelligence;
2. Universe, life, and intelligence are a result of chance events and evolution by natural selection;
3. According to some recent ideas, the situation may be a combination of the previous two groups of theories: matter, life, and intelligence are subjects of some creative, external guiding agency, chance events, and of evolution through natural selection.

In my view, the developing universes inherit from previous universes a vector, from Latin *vector*, "carrier": a natural structure and mechanism which organizes all living and non-living structures in the cosmos. The vector is a vehicle for new universes to receive characteristics and models of development from preceding universes. The previous evolutions, which happened billions and billions of times, left evolutionary patterns in the vector; the development of the humans before us is written in our genome. Our genes make us. The vector makes the Universe, life, and us.

The vector and our space-time are one inseparable entity, just like humans and their genes are inseparable.

The Universe is developing strictly to a model written in the vector. Humans are developing strictly to a blueprint written in their genome.

The vector is a very sophisticated structure, and sometimes it seems to us to be a living creature. But being placed in the timeless extensions (extra dimensions) of our space-time, it can't have all characteristics of a living creature—it is not living but not dead, because it has features of an intelligent entity: creates, organizes, and controls everything in our Universe.

The vector contains information for the future development of the species in our Universe, memorized during previous evolutions. Creation and natural selection go hand in hand. Our ontological and biological future is the past of previous evolutions.

The models of future development are countless, and the vector chooses only one which then becomes our reality. There are strict rules: do not disturb the natural laws (only sometimes); keep close to the memorized model from previous evolutions; be conservative, but faster and better than before, etc.

Not everything is carved in stone. There are constant small variations and errors throughout time which should benefit the evolution.

The Universe with a capital "U" is the Universe in which we live. Universe with small "u" is any other universe besides our universe—in the past, the present, and in the future, including the predecessors and descendants of our Universe.

False or quantum vacuum is a medium in which the universes exist and from which they originate. It is like an ocean of a primordial form of energy.

Every universe is born from this energy ocean, and almost everything turns eventually into energy.

The Big Bang theory works well only for the period after the Big Bang. Now many scientists are inflating the universes instead of "Big-Banging" them. In the Andrei Linde model for emerging universes, an eternal oscillating scalar field in the false vacuum is losing energy, giving it up in the form of elementary particles which form the initial matter of the future universe.

According to the vector model, an instantaneous ripple in the ever-fluctuating quantum vacuum causes losing of energy, giving it up in the form of a chaos of vibrating energy strings

and particles which are forming the initial matter/energy of the new universe. Matter and energy are interchangeable: $E=mc^2$. The new universe just pops into existence enormously huge; it doesn't become bigger and bigger as an inflating balloon. The universe starts as matter only, there is still no space and no time, and familiar terms like slow, instantaneous, huge, etc. could be very misleading.

But what initiates the loosing of energy into matter in the primary energy ocean? The irregularities (fluctuations) of the quantum vacuum are amplified by an external agent—the vector.

After the initial genesis of matter, the vector tells the Nature fundamental laws and runs them: the speed of light, the strength of magnetism, of gravity, the masses of the elementary particles, etc. It defines also the speed of evolution, the level of competition between the sentient species, the emerging and doom of life and intelligence.

It determines the very essence of the Universe.

There is no need for big crunches or eternal inflation. The universes just dematerialize again into primordial energy. This is not an instantaneous but instead a relatively long process.

The vector runs the Universe through all phases of its natural life—from birth to death. The entropy of the unfolding Universe is increasing. That means that more and more energy becomes unavailable for conversion into work. The Universe is "running down." It is a nonreversible mechanism; our world has limited resources and a limited lifetime. After the normal life period of the Universe is over, it turns again into energy.

After one life cycle is over a new one begins, and the supposed end product of the Universe—a superbeing, a great number of grand civilizations, or something else—has to move into another universe in order to survive. The adopting universe should have different natural laws which are more suitable for such advanced beings.

The key question here is: why don't they—superior megaintelligences from previous evolutionary cycles of our Universe, from other universes, from the supposed other dimensions, or from wherever they are hiding—contact us officially? Why don't they give us a helping hand, saving billions of human lives from diseases, crimes, wars, and other calamities—man-made or natural? They have their good reasons for not doing what we would expect from them.

The universes are like the legendary phoenix which lives 500 years, burns itself on the funeral pyre, and rises alive from its ashes to live another period; with every new life cycle the unfolding universes are becoming more sophisticated and are producing more advanced offspring.

The new paradigm provides a rational basis for interpreting many phenomena located around the fringes of modern science: precognition (knowledge of future events, mainly through extrasensory means), telepathy, UFOs, levitation, teleportation, miracles, impossible coincidences, telekinesis, shaman healing, etc. All of these are manifestations of a natural, inheritable structure from many universes back, named by me the vector.

The novel paradigm also makes clear why human history and the lives of many individuals often look like "...a tale told by an idiot, full of sound and fury, signifying nothing." (William Shakespeare, *Macbeth*)

Many roads lead to the vector.

A quest for the Hidden Alpha which is governing my life, your life, all matter, and all life forms in this Universe is a must. If you think, you are in control of your life, after reading of this text, think again.

DINOSAURS ON THE MOON

Dinosaurs could have landed on the Moon 65 million years ago, if they have not been wiped out by a gigantic asteroid. This seems to contradict the equal start hypothesis.

Ian Crawford, astronomer in the department of physics and astronomy at University College London, states in his article *Where Are They? Maybe we are alone in the galaxy after all*, published in *Scientific American*, July, 2000, that without their extinction, a result of a chance event, evolutionary history on Earth would have been very different.

Dr. Dale Russell of the National Museum of Natural Sciences in Ottawa, Canada, coined the word dinosauroid, an intelligent creature that evolved from the dinosaurs. He claims that some dinosaurs had all the ingredients of success that we see later in the development of the apes, and were well on their way to becoming sentient species. Dr. Russell even sculpted a catchy model of the supposed brainy dinosauroid. It depicts what may have happened if Troodon, a

dinosaur species, had not died out at the end of the Cretaceous but had instead continued to evolve.

Several dinosaur species were very manlike: they stood around two meters high on their two hind legs, had a relatively large braincase, stereoscopic vision, and hands with opposable thumbs; their forelegs with slender flexible fingers were ready for use as hands. They were well organized, hunted in groups, and coordinated their attacks.

Some dinosaurs were nearly warm-blooded, an important step toward intelligence.

It is often speculated that several bipedal dinosaurs were in a good position to develop intelligence, civilization, and sophisticated technologies, enabling them to start exploring the Galaxy 65 million years before us, if they haven't been killed off by some natural disaster. It is supposed also that dinosaur-like creatures on other planets were not wiped out by a chance event, and they have been traveling all across the Galaxy for many millions of years now and are already colonizing it.

It is interesting to note that some dinosaurs bear a striking resemblance to descriptions of aliens given by witnesses during UFO encounters: had large, elongated eyes, absence of ears, long, clawlike fingers, reptilian nostrils and skin. The "reptoids" are the most common alien species after the so-called Grays. There are researchers who assume that the reptilian/dinosaurian visitors from outer space are not extraterrestrial in origin but survived descendants of an intelligent race of dinosaurs which roamed the Earth during the Cretaceous or Jurassic period. According to this belief, the hypothetical dinosaur civilization could have started on Earth during the Cretaceous and would have had at least 65 million year head start on humans.

Dr. Michael Magee coined the term *anthroposaurus sapiensis* for intelligent dinosaurs. They are also called *dinomen*, *saurornithoides*, lizard men, *dinosauroids*, *reptoids*, *humanoid dinosaurs*, *dinosauropods*, *dinosaur hominids*, *draco*, *dinosaur men*, and so on.

In recent years, the idea that without the extinction of the dinosaurs, life history on Earth would have been much different has become a very popular belief. But did the dinosaurs have all of the attributes considered necessary for intelligence in the intelligent mammal? Was it really possible for dinosaurs to outsmart mammals, dominate our planet, and start colonizing the Galaxy 65 million years ahead of us? According to many recent articles and books written by academic scientists, independent researchers, and nonprofessionals—yes!

But there is a very big problem with a supposed dinosaur civilization at the end of the Cretaceous: the method of breeding.

Because of the extensive fossil record of extinct dinosaur eggs, eggshells, and embryos, it is well established that dinosaurs laid eggs and like most living reptiles and birds, built nests. The nests were excavated in soils and in wet sands. In order to provide temperature stability and elevated humidity, the eggs were covered with sand, soil, or rotting vegetation which produced fermentation heat. Many dinosaurs were simply too big to sit on their eggs.

The typical reptilian reproduction model is oviparous—the eggs are hatched outside the maternal body.

The principal disadvantages of dinosaur reproduction to mammalian are:

1. The nutrients inside the egg are very limited compared to the continuous supply the mammals receive inside the womb;
2. The oxygen supply is much lower as well;
3. The temperature of the reptile embryo is not constant like the mammalian fetus;
4. The dinosaur newborns don't get the mammalian high-nutritious food—milk.

There is a small group of modern and extinct reptiles which are almost viviparous (live-bearing), but their embryos still develop in shells. They are nourished only by the egg yolk. Such reptiles retain the eggs in the body for most of the developmental period. Hatching occurs shortly after the eggs are laid.

A few MODERN reptiles have developed a simple placenta, a structure similar to the placenta of mammals: several Australian snakes and lizards, the common European viper, and some lizards.

The developing sophisticated brain needs more oxygen, more nutrients, constant temperature, and more time.

The mammalian fetus develops inside the maternal body and can receive the continuous, generous supply of oxygen and nutrients needed to build a complex brain. The milk of mammals contains all essential nutrients, important antibodies, and white blood cells. This is perfect food for infants and for their energy-hungry developing brains.

Mammals are born in a much more advanced state than reptilians; along with the other factors, it is also a result of longer gestation period.

Eggs hatch between 60 and 105 days after they are laid. The human fetus develops about 266–270 days. The mammalian brain develops from three to four and a half times longer, in a much better inner environment than the dinosaur brain, and the mammalian fetus and newborns get high-nutritious food for their growing unfolding brains.

In short, the brain of live birth mammalian animals is evolutionarily higher than the brain of animals reproducing through the hatching of eggs and is far more sophisticated. The dinosaurs laid eggs, and their brains couldn't develop enough to outsmart mammals. Thus, the dinosaurs couldn't land on the Moon in the Cretaceous.

But as a matter of fact, the reptiles evolved intelligence, a great civilization, and now they are investigating the Solar System via robotic probes and manned spacecrafts. Therapsids are reptiles of Permian and Triassic time (from 286 to 208 million years ago). They are considered ancestors of mammals, and thus humans. So we are the survived "reptoid-men" who are exploring the Solar System and are planning to colonize the Galaxy.

The Cretaceous mammals were evolutionarily higher species than the dinosaurs and their successors. They had much bigger potential, and life on Earth proved that.

Even if the dinosaurs survived the Cretaceous extinction, it would not make much difference to humans. Most dinosaurs were already declining 65 million years ago. There were left only a limited number of dinosaur species, and they were much smaller. The surviving dinosaurs developed into modern birds. Scientists agree that present-day birds are smarter than most of the Cretaceous dinosaurs.

WINDOW OF OPPORTUNITY

In 1987, R. Cann, M. Stoneking, and A. Wilson published the article *Mitochondrial DNA and Human Evolution* in *Nature*, reporting their discovery of the common matriarchal ancestor of all humans. Their theory is based on the use of DNA from the mitochondria to trace all human genetic diversity back to one female, hence the name "Mitochondrial Eve." She originated in Africa about 200,000 years ago.

Mitochondrial Eve, thus the emergence point of modern man, is one-time evolutionary event. Why animals which are fit candidates to become intelligent species don't do that? This is one of the biggest mysteries of biological evolution. According to the Darwinian theory,

appropriate lesser species should constantly evolve and turn into sentient beings. But after the emergence of humans it is as if evolution stopped producing other intelligent species. Why? The environmental conditions were, and still are, suitable, and there are enough appropriate animal species—apes, monkeys, dolphins, and others.

What is wrong with these animals or with the theory of evolution, or there is an unknown factor (or factors) influencing the development of species?

The natural history on Earth indicates that there are windows of opportunity giving start to the different phases of evolving life: a window for turning a lemur-like animal (but not lemur) about 2 feet high into prehuman, a window for starting intelligent life on Earth and in our Universe, etc. After the new species emerge, the window closes and the newly appeared creatures become subject to natural selection, until the new quantum leap. The evolution does not seem to progress smoothly, but rather has large jumps of complexity in very short time periods—the most famous example is the Cambrian explosion.

Life on Earth has a very long evolutionary history, long before the origin of our home Universe. That's why life on our planet seems so incredibly successful and beyond evolution governed by chance events. Life appeared on Earth as soon as the environment became stable enough to make it possible. After the death of our Universe a new one will start, and our evolutionary history, together with the previous ones, will be a basis for new life and intelligence. The past of the previous evolutions is, in general, our future.

All 26 phyla—these are classes of organisms that have the same body plan—came into existence on our planet simultaneously at the beginning of the Cambrian Period. The sudden Cambrian explosion around 580 million years ago is an example of a window of mass replacement of old species with new ones. This can't be done without previous evolutionary experience stored somewhere. All structural blueprints of all different species appeared suddenly and simultaneously, and since then no essential changes have taken place, no new types ever were added; there are no transitional forms. This is not compatible with Darwinism, neo-Darwinism, or any natural selection-based evolution theory.

But what would be the evolutionary benefit for Nature of such windows of opportunities?

The biological life and all human history on Earth are actually a story of hard competition and struggle for survival: between the Cro-Magnons and the Neanderthals, between cells, states, companies, species, languages, individuals... Nothing and no one can escape it.

Homo sapiens have had no rivaling species since the extinction of the Neanderthals, kept in reserve to serve as a substitute in case the Cro-Magnons couldn't make it. Now humans are competing amongst themselves, divided into many varieties of competitive groups: sport teams, family clans, sexes, political parties, countries, social movements, art movements, and so on.

The scale of competition is going up. In the early days of humans it was between the tribes, now it's between the states, tomorrow it goes into the space between the civilizations inhabiting the Universe.

The ideas of fast development and fitness are central to evolutionary biology. The hard competition between the civilizations in the Universe is among the major factors which guarantee numerous cosmic offspring of high quality for the shortest possible time period.

The space civilizations can compete successfully only if they are at about the same level of development. The means to success is competition (and cooperation) between equals. Too big differences in the development levels mean destroying of the late-emerging civilizations.

Thus, there is a relatively limited window of opportunity for starting intelligence in the Universe, and the space civilizations emerged at about the same time in order to provide diversity, quality, and quantities of sentient species.

ALIEN BUGS

Alien life forms spreading throughout space by robotic probes or spacecrafts with extraterrestrial crew is a well-liked notion in science fiction works, popular science literature, and even in academic papers.

Francis Crick, codiscoverer of the structure of DNA, proposes direct panspermia: dispersal of single-celled organisms throughout the Galaxy. In 1973, Crick and Leslie Orgel wrote the article *Direct Panspermia*, published in *Icarus*, issue 19. They presented the hypothesis that life was exported to Earth by an extraterrestrial source as a deliberate act of an extraterrestrial society. The microorganisms were delivered in unmanned spacecrafts designed with adequate protection to keep them alive during the long journey.

Professor Frank Tipler has the idea of space probes that carry artificial wombs in which human fertilized cells are placed, and the babies to be raised by surrogate parents. Both proposals, made by scientists, look like a perfect way to colonize the Galaxy, but what would happen if in

the Solar System and on Earth probes begin to arrive with all sorts of alien viruses, bacteria, cells, quasi-alive nanobots, genetically engineered microorganisms, and they all begin to reproduce themselves fabricating lots of natural and artificial organisms; or DNA reproduction machines and artificial wombs start producing legion of extraterrestrial creatures? The answer is only and inevitably one—a total catastrophe for life and all humans!

The technological means for such "controlled seeding" of life and intelligence are very simple for advanced civilizations. We should expect that alien professors would have similar bright ideas concerning artificial panspermia and colonization of the Galaxy.

In *War of the Worlds* by H.G. Wells, the Martian invaders died out, because they couldn't resist the germs on Earth. But can we resist alien microorganisms, engineered germs, quasi-alive nanomachines, or ordinary alien microfauna that normally would live in the spacecrafts and in the bodies of the extraterrestrial intelligent beings?

In 1995, the British Health Secretary stated that there is no conceivable risk of BSE (mad cow disease) being transmitted from cows to people. And we know the results: dead people and huge losses for the British economy. Both species, humans and cows, have been living side by side for thousands of years. Domestic animals seem harmless to us, but sometimes they aren't, even after all these years of living together. Diseases communicable from animals to man are called zoonoses—from New Latin *zo-* + the Greek *nosos* for disease. Concerns with diseases that afflict animals date from the earliest human contacts with them. More than 150 such diseases are known: rabies, brucellosis, plague, salmonellosis, leptospirosis, the deadly herpes B virus, trichinosis, encephalitis, anthrax, staphylococcosis, streptococcosis, tuberculosis, etc. AIDS (Acquired Immunodeficiency Syndrome) also appears to have been transmitted from animals (monkeys) to humans. By now AIDS has claimed more than 30 million lives worldwide.

Some future politicians, scholars, or meeting committees might issue public statements that it is perfectly safe to meet our space brothers because they are no threat to people. Should we trust them? Yes, if we are naive enthusiasts.

Our bodies and our environment are teeming with microorganisms. It is normal to expect that the bodies of alien beings are also teeming with microbes (a diverse group of minute, simple life forms that include bacteria and viruses)—harmless for their hosts but some could be deadly for us. The *alienoses* (*exonoses*) are diseases communicable from extraterrestrial creatures—

sentient beings and animals—to humans under natural conditions. They will be the subject of (near) future medicine—shortly after the first contacts with alien creatures.

Normal flora are microbes living in and on the body of the humans; usually, there are no harmful effects for us, their hosts. Many billions of microbes live harmlessly on our skin and in the gut; we breathe them in and out. Numbers of aerobic and anaerobic bacteria reside in certain human anatomical regions: lower intestine—approximately 100 billion microorganisms per gram of fecal matter; mouth—approximately 1 billion microorganisms per ml. of saliva; nose—approximately 20,000 microorganisms per ml. of nasal washing; skin—approximately 100,000 to 1 million microorganisms per cm^2 , dependent upon the tested skin surface. After puberty, the vagina is colonized by *Lactobacillus aerophilus*. One or more of the herpes viruses infect nearly 100% of the adult population.

Over 400 distinct species of microorganisms inhabit the various regions of the human digestive tract, making up nearly 2 kg. (approx. four pounds) of every individual's total body weight. This vast population of microorganisms far exceeds the number of tissue cells that make up the human body. We have about 10^{13} cells in our bodies and 10^{14} microbes.

Normal flora fills almost all of the available ecological niches in the human body, and produces defensins, bacteriocidins, cationic proteins, and lactoferrin which are working to destroy other bacteria that compete for their niche in the body. If this ecosystem is functioning properly, it guards the body against harmful bacteria, yeast, and viruses. It also stimulates the function of the entire digestive system and produces essential vitamins, such as vitamin K and some of the B vitamins, and regulates their levels, maintaining the body's vital chemical and hormonal balance.

Researchers have detected retroviruses in the genome of every mammal they have examined. The retroviruses spend most of their time asleep; they are present only as extra segments inserted here and there in the DNA. Humans are harboring more than a thousand retroviruses, many of which have hitchhiked with us for well over 30 million years. In placenta and fetal tissues, a select handful of retroviruses awake, commanding the cells to produce proteins and assemble them into retroviruses. The placenta and the unborn baby of a healthy pregnant woman are teeming with viruses as well. This is a normal part of every pregnancy. These endogenous retroviruses are actually encoded in the DNA of every mammal.

The human body can't be fully sterilized because soon after that such a specimen would die—some of these microorganisms take part in vital biological processes, others keep our immune system fit.

Alien and human astronauts would suffer microbic shock upon return to their home planets after adjusting to fewer microorganisms in the spacecraft, responding negatively to renewed contact with potentially pathogenic microbes that were absent during the space flight. Space travelers have to keep their immunocompetence by carrying in the cabins microorganisms native to their home environment.

The inclusion of plants, animals, and bioreactors in spacecrafts facilities in order to provide life support requirements would significantly increase the numbers of microorganisms. There are many millions of bacteria per gram dry weight of plant roots. Fungi are important for baking breads and fermenting wines, beers, and vinegars. Many medicines are produced with the help of bacteria and fungi, most notably, the antibiotics, like penicillin, streptomycin, tetracycline, etc.

The failure to detect on Earth alien microorganisms or alienoses (diseases transmitted from alien creatures to peoples) is a very strong argument against extraterrestrial visitations.

There are reported every year hundreds of thousands of UFO sightings, abductions of people by alien crews, medical examinations of humans in nonterrestrial spaceships, sexual relations with aliens, accidents, autopsies on alien corpses, and other contacts with extraterrestrial creatures.

There are many reports from all around the world describing men and women taken aboard flying saucers and having sexual intercourse with various alien races, even space babies were born. Microbes are transmitted by the direct transfer of bodily fluids, such as blood and blood products, semen, and other genital secretions from one person to another; they can enter the body through the lining of the vagina, penis, rectum, or mouth. The microbes also can be transmitted across the placenta.

Every day millions of samples of human blood, tissue, saliva, urine, feces, etc. are collected and sent to labs to be analyzed. Not even a single researcher, physician, or medical technician has ever reported an alien microorganism or alienosis.

There are persistent rumors that among the debris of the supposed UFO which crashed near Roswell there were found dead bodies of ET astronauts. In 1947, Colonel Philip J. Corso

claims to have seen the corpse of a dead alien in a wooden crate; it was supposedly one of the creatures that had been killed in the crash. Grady "Barney" Barnett, a government engineer, told friends and his son that he was one of the first to reach the crash site. He saw a disc-shaped object and dead bodies of aliens. Dr. Weisberg, university physics professor, said he examined the disc. According to him, the interior was badly damaged and there were six occupants; an autopsy on one of them revealed that they resembled humans.

Rescue, military, and medical personnel reported dead alien corpses at Roswell and other crash sites. Many have been given autopsy examination. Witnesses claim that they saw in an underground base a room full of canisters where bodies of dead aliens were stored. There are also reported graves of extraterrestrial beings. According to researcher Leonard Stringfield, the U.S. has recovered a total of more than thirty bodies from crashed alien space crafts. The UFOlogist Timothy G. Beckley supposes that about 110 extraterrestrial spaceships have crashed around the globe.

Since 1995, hundreds of televisions all around the world have broadcast an alien autopsy film. Ray Santilli, a London-based film producer, claims to have bought it from a cameraman who had taken the footage in 1947 at the crash site near Roswell.

There are dozens of autopsy reports on alien cadavers recovered from various crash sites.

Glenn Dennis had been the Roswell mortician in 1947. According to him, he had seen debris of the crashed flying saucer and had been told about corpses of smallish extraterrestrials by a friend. On the evening that the alien bodies had been recovered, he "blundered" into the Roswell Army Hospital. A nasty officer confronted him, and Dennis had been warned that if he ever told anyone about the crash or the alien bodies, "they will be picking your bones from the sand."

There are interviews with several medical doctors who did autopsies on ET bodies.

Jamie Shandera, documentary moviemaker and UFOlogist, claims that he anonymously received a packet which contained two rolls of undeveloped 35-mm film. He developed the film, which appeared to be part of a briefing report to the newly elected President Dwight D. Eisenhower, describing details of the Roswell flying saucer crash. According to these film reports, four alien corpses were among the debris of the downed extraterrestrial spacecraft; they had been mutilated by desert scavengers and were heavily decomposed due to exposure to the elements.

Such decomposing alien corpses at the crash sites, their blood, urine, feces, saliva, etc. are for sure source of extraterrestrial contamination. The healthy nonterrestrial astronauts are dangerous, too. They could cause deadly alienoses. The autopsies and the preservation of alien bodies after WWII were not safe enough to modern standards, and contamination with ET microorganisms was inevitable. In any manned alien space ship there should be food, canisters with samples of tissues and microbes, medicines, drinks, breathing air, plants, hardware, all kind of supplies, and so on which are all sources of microbial contamination. The governments on Earth could hide alien corpses, but they are not in the position to hide microorganisms left by extraterrestrial visitors. It's just impossible. No government (official, shadowy, secret, mythical, mystical, or whatever), organization, or individual on our planet has the technology to do that.

Where are all of the microbes left by the supposed aliens? It is highly improbable that the extraterrestrial microfauna is identical to these on Earth. Only one surviving bacterium or virus could multiply into billions in no time. There are many billions of microbes just in one body (dead or alive).

What could be worse for space travelers than a catastrophic breach in their high-tech protective spacesuits, which provide life-saving flow of breathing air and protecting against alien germs? According to numerous alien encounter reports, humans were in close contact with extraterrestrial astronauts which are depicted to breath terrestrial air, drink water, eat human food, and so on, and most of them don't even wear adequate protective suits and helmets, but only some fancy skin-tight suits, silver suits, yellow ski suits, jump suits, even Nazi military uniforms. Some aliens were dressed like humans or in some sort of mocking space suits, but many of them were actually naked during the contacts.

Millions of humans are reported to enter alien spaceships and none of them were wearing protective suit. Germ contamination is equally dangerous for humans and extraterrestrials.

Researchers still haven't detected extraterrestrial microorganisms on Earth, and one can conclude that there aren't any manned visitations (now and in the past) by extraterrestrial civilizations or if there are any, they are very limited by number and activities and are under strict control.

In 1347 an outbreak of deadly bubonic plague occurred in China and spread throughout Asia and to Europe. The plague mostly affected rodents, but fleas could transmit the disease to

people, too. Once people were infected, they infected others very rapidly. For five years, 25 million people, one-third of Europe's population, were dead due to the Black Death. The disease killed with terrible speed. Boccaccio, the author of the Decameron, said that its victims in many cases "ate lunch with their friends and dinner with their ancestors in paradise."

About 50 percent of the native inhabitants of the Polynesian and the Hawaiian Islands died as a result of imported microbes by foreign seamen.

During the Spanish conquest of Mexico, smallpox and other diseases killed millions of Native Americans which had no natural resistance to these infections. Smallpox killed three of every four Hopis and later the epidemics reduced them to a few hundred. Chicken pox and measles, which are common and rarely fatal among Europeans, often proved fatal to Native Americans.

The 40–50 million deaths incurred in World War II make it the bloodiest military conflict as well as the largest war in human history. Tiny microorganisms can be as deadly as grand-scale wars. The Spanish influenza epidemic was among the most devastating epidemics in human history. In 1918–1919, between 30 and 50 million people throughout the world were killed by the Spanish Influenza. The effect of the pandemic was so severe that the average life span in U.S. was depressed by 10 years.

Now modern science still can't stop AIDS, and the global epidemic is larger and more far-reaching than epidemiologists believed possible a decade ago. Scientists predict that in the next 20 years, 70 million people will die of AIDS.

And these are domestic germs. Extraterrestrial microbial contamination could set back the human development for centuries or even wipe out all of us.

Humans, like all extraterrestrial civilizations, should create a reliable space-based surveillance and reconnaissance system able to detect, quarantine, or destroy any alien life form which could be dangerous for the terrestrial flora and fauna.

The human immune system protects the body from pathogens, foreign substances, malignant, and infected cells by destroying them. We should create similar protective system in the Solar System in order to survive.

Humans are still alive because they aren't here: the extraterrestrials and their alien microbes.

For their own good the space civilization are separated by huge interstellar distances, but inevitably will come the phase of contacts and competition.

The space civilizations will closely encounter each another when most of them are in a position to survive such contacts.

VON NEUMANN MACHINES

Extraterrestrial Intelligent Beings Do Not Exist is the title of an article by Frank Tipler. In his view, older or more advanced civilizations would use self-replicating probes to explore, control, and colonize the Galaxy in a very short time compared with its age of about 13.7 billion years. In his article, he concludes that if intelligent beings exist, their probes should already be here—but there is no evidence of extraterrestrial robotic spacecrafts: ergo, such beings do not exist. Tipler's argument is actually a version of the Fermi paradox.

Self-replicating robotic spacecrafts, called von Neumann probes after John von Neumann who established the mathematical laws of self-replicating systems, are considered an economical method of exploring and colonizing space. The notion is that they utilize local materials to build numerous exact copies of themselves which would be launched to the nearest stars, where the process would be repeated.

The impressive idea for robotic colonization of the Galaxy through von Neumann probes has two major disadvantages:

1. Soon after the self-replicating probes are set out across space, they would already be outdated because science and technology are developing very quickly, and the space distances are too vast. Year after year the technological civilizations should send into deep space more and more probes, for the previous ones are already outdated antiques of limited use, if any. According to their flight plans, the robotic spacecrafts should travel many thousands and even millions of years.

The problem with the quick outdated of robotic probes could be solved partially by reprogramming the replicators via radio signals. The billions spent on setting up a gigantic radio network would be money wasted because: first, such a method of communication and reprogramming is very slow and highly unreliable—the radio signal carrying sophisticated instructions should travel many thousands of years (about 120,000 years in order to cross the

Milky Way Galaxy) via numerous relay stations; and second, many of the self-replicating machines would turn into useless trash or, more importantly, into dangerous idiots because of mistakes due to computers or intelligent species, to all kind of technical failures, errors, viruses, software and hardware mutations, inevitable accidents, electromagnetic noise, jokes (some “intelligent” guys have an unsuspected and nasty sense of humor), hostile activities, and so on, and so on.

2. Countless self-replicating machines of all technological generations made by millions of civilizations would spread out like space techno-cancer, devastating almost everything they encounter, self-replicating themselves following their code to reproduce.

Carl Sagan and William Newman have argued that no civilization would dare build such machines for fear that they would mutate into monsters that would destroy the entire Galaxy. But Nature doesn't rely on ethics. On Earth all possible wrongdoings have been done—except the ultimate one: humans still haven't self-destroyed themselves. The uniformity of the Universe leads us to expect that many things elsewhere in the cosmos will be the same as they are here on our home planet: so, the wrongdoers and silly persons of all sorts are all around the Universe.

Imagine what would happen if only a single autonomous self-replicating probe touch down somewhere in the Solar System, and following its program begins to reproduce itself on the Moon, on Mars, on thousands of asteroids, on the satellites of planets... Soon we would detect the launching of millions and millions of probes which would be landing on all possible space bodies around the Earth. These machines would arrive on our planet, too, millions of them. The unwelcomed high-tech visitors on Earth would be only a small part of the countless swarms of self-replicators roaming the Solar System, looking for local materials in order to utilize them. They would infest our entire home star system. But would they be just harmless robotic probes with sophisticated artificial intelligence which would stop to replicate and leave the Solar System after detecting life and intelligence? Maybe some of them would try to communicate with us and send back signals to their creators; some might continue to replicate ignoring humans; some might even wage a war against the intruders—us. They would consider the Solar System their home territory. These machines would not be malicious, they would just be following simple program instructions to survive and replicate themselves, with deadly consequences for us.

Von Neumann machines could also be used as deadly weapons in wars or by terrorists on Earth or in space. The self-replicating robotic berserkers would destroy everything they encounter

in the enemy space. People most often imagine these killing machines to be huge metal bastards creaking loudly and throwing flares and missiles; as a matter of fact, they might also be tiny or even (almost) invisible, but highly dangerous.

Humans still don't have the recourses to beat off encroaching self-replicating machines.

POPOFF MACHINES

The problems with the von Neumann probes could be solved by adding two new elements and removing the unnecessary and dangerous self-replicating unit, controlled by an autonomous computer.

The first element to be added, in order to get a safe and controllable robotic probe, is a matrix: a personal, standard interface software mediating between human and machine intelligence. This software should be standardized by the authorities, hence the name matrix, in order to be avoided misuses and for better control of the artificial intelligence and machines.

The personal matrix significantly enhances the mind capacity and productivity. It accelerates the thinking process; there is no limitation of memory storage, provides instantaneous access to all human knowledge, etc. The human/matrix structure possesses both the advantages of the human brain and of artificial intelligence; thus the machine intelligence could not dominate people, because, through the matrix, humans would have all of the qualities of the machines and the artificial intelligence. In that way machines couldn't outsmart the human race—a major concern of scholars, futurists, writers, etc.

The matrices could be made an integral part of the human brain through a microchip implant, feeding impulses directly into the brain and giving commands with our thought. But to use the power of the matrix, it is not required to have an implant. A good computer is enough, too. The implant just makes the operating much easier, quicker, comfortable, and much more effective.

The second necessary element to be added is instantaneous communication through channel based on quantum entanglement (or some other novel technology). The laws of modern physics limit the speed of material objects, but not of information. Such channels would be reliable, high secured, and cost-efficient.

The instantaneous info channels and the matrix enabled robotic equipment would provide high-performance telepresence: this is the ability to experience in real time another locale or another world via remote robotic “eyes” to see, “feet” to move, and “hands” to manipulate. The experience of “being there,” “amusing oneself there,” or “working there” would no more require one physically to be there—even if the place of residence is many star systems away.

The instantaneous data channels and the matrix resolve the disadvantages of uncontrolled self-replication and quick outdateding of the interstellar robotic probes: one could update the software and the hardware on a regular basis. There is no need of an autonomous computer with intelligence close to the human level and of self-replicating units.

The new space probes could trace a huge network of instantaneous data channels and spread out huge amounts of machines into the cosmos which are managed and controlled through quantum channels and personal interface software; from local materials they would be able to manufacture robotic factories, power plants, all kinds of production machines, new space probes, robots, elements of defense systems, and so on.

Humans could control robots, artificial intelligence, and devices through this technology (robotic telepresence based on instantaneous communication and matrices) not only in remote real environment, but also in hazard areas and situations like bomb disposal, mining, military operations, subsea works, rescue of victims from fire, dangerous radiation, toxic atmospheres, or even hostage situations. The applications are practically countless: remote surgery, entertainment, education, and so further. They can also be used to a change in scale, where for an example a surgeon may use micromanipulator technology to conduct surgery on a microscopic level; for construction of incredibly small nanodevices, etc.

It is inevitable humans to face both properly functioning and damaged von Neumann machines (robotic self-replicating devices and spacecrafts controlled by autonomous artificial intelligence) and machines postulated by Popoff (matrix enabled robotic machines providing telepresence which are operated over instantaneous data channels).

In order to survive, all space civilizations should be able to stop alien ships, self-replicating machines, Popoff machines, or probes from entering their habitat (their solar system at this stage of development) and have the technological and military power to destroy them, if necessary.

BACK TO FERMI PARADOX AND EQUAL START HYPOTHESIS

Sound hypotheses answering the Fermi paradox have to satisfy two major requirements: first, the universe should be teeming with life and intelligence, and second, most of the sentient beings still haven't contacted each other, radio wave leakage hasn't been detected, or other hard evidence proving the existence of alien civilizations.

Such hypothesis should also meet some basic principles:

1. Occam's razor advises us to keep things simple;
2. The Copernican principle is the idea that the location of human in the Universe is not special, and the Earth is typical and common;
3. Darwinism (natural selection, hard competition, and survival of the fittest) is a similar idea applied to biological life forms, and humans are an average space civilization;
4. The principle of uniformity says that it's the same everywhere in the Universe.

The Fermi paradox, the problems with the dangerous self-replicating von Neumann machines and the Popoff machines, and the space germ contamination are closely connected. They are part of a bigger but simple concept—a Universe teeming with fit civilizations. So the equal start of intelligence is a must. The late-emerging space races are doomed.

The creatures in our Universe live in a world of limited resources: oil, nice partners of the opposite sex, good salaries, champion cups, best quality whisky, etc. If the resources we need, or believe we need, are abundant, there would be no competition, hence very slow or almost no evolution of the life forms and the intelligence.

We live in a world guided by models which are stimulating the evolution through competition. Eden is a place of perfect happiness; there is no place for rivalry between two or more persons or groups for an object desired in common, usually resulting in a victor and a loser, often involving the destruction of the latter or the both. The doctrines of paradise, eternal peace and love, of golden ages of the past when people lived in harmony and brotherhood, or of some future golden ages are impossible myths, because in such societies the evolution is too slow or nonexistent. The healthy, eternal (or at least very long-living) members of such a utopian world

would enjoy life, fully satisfied in a perfectly safe environment. But there aren't enough stimuli to change anything or themselves—evolution means constant changes.

As a matter of fact, paradise, perfect happiness, infinite life, resurrection from the dead of our beloved ones or famous historical personages, eternal youth, creating a copy of someone who died in an accident, and other similar wonders are perfectly possible. That model of desired world or of a person could be materialized by the vector, and we would live in supreme bliss, forever in Eden. But our world is guided by another model which requires growth, evolution, progress, a huge number of competing individuals and civilizations, countless births and deaths.

The speed of evolution should be defined very well.

If the competition is too hard, the death rate as a result of rivalry (wars, crime, all sorts of accidents, jealousy, and so on) becomes too high and the development eventually slows down—human, industrial, financial, infrastructural, and other losses are turning into stopping factors; people are becoming highly demotivated. This is especially important when intelligent species develop self-destructing technologies like nuclear, chemical, biological, and other weapons of mass destruction; devastation and havoc could be so huge that such civilizations might not recover in a reasonable period of time; they would be assimilated or destroyed by their competitors.

If the level of competition is too low, then the frequency of death within a given population as a consequence of the competition is significantly reduced, and people enjoy a comfortable life, however the rate of development would be insufficient, and such civilizations might not survive rivalry.

The future generations of all space races should invest tremendous efforts and resources to reprogram the vector (just as we are now trying to reengineer DNA) in order to provide a more secure life and comfortable environment. But they (including our descendants) would also be much closer to the death of their local solar systems with their dying suns and to the thermodynamical end of the Universe with its depleting natural resources. In order to leave their star system, and after that the Universe, the future generations would need huge energy, new territories, and many natural resources. The intelligent space races would face two main strategies: a comfortable end to their civilization or a fierce fight in order to survive, abandoning the dying Universe.

The refusal to compete and evolve means certain death to any civilization.

MEGAINTELLIGENCE (M.I.)

Megaintelligence (megacivilizations) is a term describing mature intelligences who manage to abandon their dying home universes. The sentient species inhabiting our Universe, including humans (if they survive), should also leave it—if they want to make it.

The megacivilizations are monitoring, controlling, and guiding to some extent the development of organisms and intelligence in this life cycle of our Universe. It is possible that the Universe (the Earth, too) is visited periodically by some M.I. in order to take all sorts of samples, including specimen of intelligent life forms.

But why don't these almighty creatures show up? Why don't superior intelligences contact us in an open manner or officially? They have their good reasons for that.

Hoping for more clarity and a better solution, I consider the Fermi paradox in two aspects:

1. Why don't we have hard evidence for intelligent life inhabiting our Universe?
2. Why don't the megacivilizations outside of our Universe show up? They have the technological means to do that.

Debating the Fermi paradox, only the first aspect of it is usually taken into account—why don't we have solid evidence for intelligent life inhabiting our Universe? The equal start hypothesis is a possible answer.

I often asked myself one simple question: Why are there in the Universe intelligent creatures at such a low level of evolution like humans, considering first, the enormous time since the beginning of the All—not only these humble 13.7 billion years since the origin of our Universe, but the countless time before that; and second, taking into account the incredible vastness of the Being—our Universe is only one of numerous worlds? It seems obvious to us that evolution should produce much higher intelligence during this immense time period.

Humans patently aren't the pinnacle of development of all matter, life, intelligence, or whatever. The anthropic principle is a very self-misleading hypothesis.

Anthropocentric ideas regard humans as a central fact of the Universe and assume that *Homo sapiens* are the final aim and end of the All. It views and interprets everything in terms of human values and experience.

The simplest form of the anthropic principle claims that God created the Universe for us, humans; however, some religions and lores accept that there are many worlds in the All, inhabited by various creatures; hence, they reject the anthropocentric approach when interpreting universal principles.

The anthropic cosmological principle states that the natural laws, constants, and basic structures of our Universe are not completely arbitrary—instead, they are constrained by requirements that allow the existence of humans. The word anthropic derives from the Greek *anthrōpikys* which means human.

Humans are puffed up with imaginary self-importance. Most of the scholars can't give up the term anthropic. Now, there are several anthropic principles: weak anthropic principle, strong anthropic principle, final anthropic principle, individual anthropic principle, participatory anthropic principle, etc. Researchers coined the term “observer,” realizing that humans can't be final aim and the end of the Universe; hence, adding the word anthropic to some ultimate universal principle is hugely misleading (actually totally wrong).

The dog barking and running around your backyard is an observer, too. Universe “designed” with the goal of generating and sustaining “dogs”? Personally, I doubt it.

Then the term was changed and the observer became intelligent. The intelligent observer principle (or the sapiens principle) for sure is an incorrect term, too. The ancient shepherds were intelligent observers—they could heal their sheep, knew stories, poems, and myths, had their cosmology, some could read, and so on. But the Universe (that capricious, grand old lady) didn't stop developing when reaching its final goal: generating the intelligent shepherd. Instead, it is galloping further at full speed. Obviously, intelligent observing is not enough. Maybe we should add creation, participation in creation, acquiring new knowledge? Not enough, too. Even now, humans are creating a lot of new things. What about great scientific discoveries? Presently, we are only assimilating the knowledge stored in the vector during previous evolutionary cycles of the Universe. The so-called big scientific discoveries could be actually transmitted from the vector to scientists who are prepared to understand them. At that very moment, billions of scientists in our Universe are discovering the same theories human scholars are finding out on Earth. Billions of Einsteins rediscovered the theory of relativity; actually they got it from the vector. Pretty humiliating idea! One of the many tasks of the vector is to educate us. Now the sentient beings in our Universe (biological or not) are more like (bio)robots which are created,

organized, controlled, educated, etc. by the vector. You don't like the idea? I don't like it either, but I would prefer to accept the truth, instead of some self-misleading puffy belief about the great importance of human and alien creatures consciously exploring Nature to the full extent. I also like the notion that we are intelligent, self-governing, originative, independent, creative, and self-sustaining creatures, but is it true?

Bitter facts are better than self-misleading illusions or doctrines if one is going to explore the world. Comforting lies have nothing to do with research.

We still don't have enough knowledge about the evolution of Matter, Life, and Intelligence to get a clear picture about the future of the Universe and can't draw realistic scientific conclusions about ultimate or final universal principles. We can only speculate.

The most probable answer to the seemingly simple question "Why are there in the Universe intelligent creatures at such a low level of evolution like humans?" could be that Matter, Life, and Intelligence develop in cycles and are arranged in suitable agglomerates. Now we are at the low stages of such a cycle of development in our present agglomerate, the Universe. We can access only our agglomerate. The creatures inhabiting more advanced agglomerates can access the lower ones and are guiding them to some extent.

The development of our Universe is the longest evolutionary cycle we know. According to modern science, it would last up to one hundred billion years. The developing universes might be subjected to an endless series of evolutionary cycles.

What's the point of development in cycles? Why is Mother Nature repeating itself periodically? Can we observe such cycles on Earth?

Cycles are an inevitable part of evolving Matter, Life, and Intelligence. A cycle can last the whole life of a universe, but there are also a great number of shorter cycles: year, day, biological cycles of the human body, etc. Everything (matter or living creatures) is subject to cycles. Humans are also exposed to many individual cycles, but the most important one (from an evolutionary point of view) is: birth, life in competitive environment in order for the specimens to develop as much as possible, transferring the gathered information—the genetic one through the DNA; the acquired practical and scientific knowledge through education—to the next generation, and death. Generations and universes are following the same pattern. Generation after generation humans are becoming more developed and sophisticated. Cycle after cycle the universes are producing more advanced intelligences.

The megacivilizations from previous evolutionary cycles are superbeings in comparison to us, but they still can't change the established global process of creation and evolution. Our Universe is like some kind of gigantic womb reproducing megaintelligences. Maybe in the future there will be other means of reproduction and evolution of intelligent beings, but the main principles will remain the same, at least for a very long time.

But why don't the megacivilizations show up? Because they want to get offspring from our Universe—healthy, intelligent, competitive. The megacivilizations must play their competitive games, too: among them there should also be winners and losers. Leaving their dying universes, the megaintelligences don't enter some sort of paradise, but another competitive world which shows no mercy when it comes to evolution.

World War I, World War II, the Cold War, and many wars back in time stimulated very much the development of science and technologies. There are enough studies on the subject. Believe it or not, like it or not, wars are one of the main motors of evolution and the development of sciences and technologies. They are the highest degree of competition. But we don't like wars, no matter how productive they are. We want to live in peace and in good health as long as possible. If the mighty megacivilizations show up, we would ask them to stop the wars, which would actually reduce the level of competition. But this is against the interests of the megaintelligences, because evolution becomes much slower and the end product of the Universe—actually the offspring any M.I. is waiting for—would develop below expectations.

If the superior megacivilizations show up, we would ask them also to prolong our lives. They have the know-how: humans could live 10,000 years or longer in perfect health—no cancer, no heart attacks...there are thousands of life-threatening diseases. But on the other hand, poor health, numerous illnesses, and short life expectancy are mighty stimuli for humans to develop medicine, science, and technology which in turn accelerate evolution. There are also other similar reasons why the megacivilizations don't openly visit in open manner civilizations like ours.

The megacivilizations are also guiding to some extent the evolution of intelligence in our Universe and in other universes, and they fully agree with what they watch on Earth and on other planets—they see numerous healthy space races developing quickly, exactly as they expect. They should be satisfied because their offspring will be more advanced compared to the newborns from the previous evolutionary cycle of the Universe. Just as we expect the next human generation to

be more developed than the previous; we are making our best efforts to ensure that our kids get a better education, are more healthy, and so on, so that they will be better than us in everything.

Maybe the megacivilizations are guided as well, and there might be some sort of multilevel creation and control.

The megaintelligences are not going to save us from the benefits of competition; benefits from their point of view, that are only disasters for us. They do not intend to prolong our lives (we should take care of this) or to solve the poverty problem (another mighty stimulus), to stop the wars and crimes, and so further. The story of the Savior that all are waiting for is just a myth, giving us hope for better days. It is counterproductive, for if it becomes a reality, it would slow down evolution. But the Final Judgment is a reality which humanity will inevitably face. Not all space civilizations will get to go on existing further.

The megacivilizations are furtively guiding us, together with the vector, in a highly clandestine manner, revealing their presence to us through mythology, religions, parapsychological manifestations, etc. Their goal is: numerous intelligent species, developing as fast as possible.

Humans are still alive because they aren't here: the extraterrestrials from our Universe, their robotic probes, and the alien microbes. In order to produce huge numbers of sound space civilizations, the vector keeps them separated by huge cosmic distances. The equal start of advanced sentient life forms in such a great developing Universe gives these species the chance for survival and progress.

When potentially dangerous manned spacecrafts, von Neumann probes, Popoff machines, or alien life forms come into the Solar System, a reliable space defense system would be a matter of life and death.

The lifesaving immune system is a complex network of interacting cells, cell products, and cell-forming tissues protecting the living body from pathogens and other foreign substances. It destroys infected and malignant cells and removes them. There is no other way for the living organism to survive. Seconds after the immune system stops working, the body begins to decompose.

In the near future, humans should begin to build up a reliable space defense system—a complex network of interacting humans, software, and machines, protecting our present habitat,

the Solar System, from pathogens, quasi-alive forms, machines, and any alien life forms which could pose a threat to the terrestrial life or would change our environment. There is no other way to survive.

With much wisdom comes much sorrow,
The more knowledge, the more grief.

—Ecclesiastes
circa 350 B.C

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