Entropy, Syntropy and Climate Change

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Abstract

The Quaternary is the last of the three periods that make up the geological era of the Cenozoic. It began 2,58 million years ago and is still ongoing. Temperatures have decreased and glaciations have started.

In 1972, the foremost US and European geologists discovered that we are entering the next ice age and wrote to the President of the United States: "We feel obliged to inform you ...".

Three scenarios are possible:

- 1) humanity will become extinct;
- 2) the group that controls the central banks and the media is concentrating immense resources in an attempt to let an elite survive the ice age;
- 3) humanity as a whole will be able to survive, but this requires that we shift from the present entropic era to a new syntropic one.

The third scenario can offer incredible opportunities for the progress of humanity. However, the challenges are immense. Only working together for the future and wellbeing of humanity will allow to overcome these challenges.

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Introduction

The *Quaternary* is the last period of the *Cenozoic* era. It began 2,58 million years ago when temperatures gradually decreased and glaciations started.



The first glaciations lasted 41,000 years and temperatures were on average 4 degrees lower. The last glaciations stretched beyond 100,000 years, with temperatures on average 8 to 10 degrees lower.

Short, warm interglacial periods, lasting about 10,000 years, separate each glaciation. The warm period in which we now live began 11,700 years ago. Ocean sediments show that we are re-entering the next ice age and that temperatures will soon return glacial.

In 1972 the leading geologists met at the Brown University and felt obliged to inform the president of the United States of America.

www.sintropia.it/journal



- Substantially lowered food production due to the shorter growing seasons and changed rain distribution in the main grain producing belts of the world, with Eastern Europe and Central Asia to be first affected.
- Increased frequency and amplitude of extreme weather anomalies such as those bringing floods, snowstorms, killing frosts etc.

Mr. President

December 3, 1972

With the efficient help of the world leaders, the research could be effectively organized and could possibly find the answers to the menace. We hope that your Administration will take decisive steps in this direction as it did with other serious international problems in the past. Meantime however it seems reasonable to prepare the agriculture and industry for possible alternatives and to form reserves.

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It might also be useful for Administration to take into account that the Soviet Union, with large scientific teams monitoring the climate change in Arctic and Siberia, may already be considering these aspects in its international moves.

With best regards,

Auria

George J. Kukla Lamont-Doherty Geological Observatory

R. K. Matthews, Chairman Department of Geological Sciences

GJK/RKM:mc Enclosure

Glaciations

Glaciations were understood in the 18th century, when extensive observations showed that continental glaciers had covered much of Europe, North America and Siberia. The position and orientation of the moraines, striations, and glacial ice flow were detected and detailed maps of the extension of the ice caps, their direction and the meltwater channel systems were compiled. This allowed to decipher a story made of multiple glacial and interglacial periods.

This information is now supported by ice-core data.

Ice retains the same chemical properties that were present when the snow fell and in the ice cores it is possible to distinguish years similarly to the rings of a tree trunk. Air bubbles trapped in these ice rings allow to determine the variations of methane, carbon dioxide, temperature and dust due to volcanic eruptions.



² en.wikipedia.org/wiki/Ice_age#/media/File:Vostok_Petit_data.svg

³ cdiac.ornl.gov/images/air_bubbles_historical.jpg

cdiac.ornl.gov/trends/co2/ice_core_co2.html

Antarctica's ice cores allow to reconstruct temperatures, carbon dioxide and atmospheric composition, for the entire Quaternary period.

In the graph we see the history of CO_2 and temperatures up to 400 thousand years ago. We are on the right and the more we move left, the more we go back in time, until we reach four hundred thousand years ago.



Each warm, interglacial period is associated with increasing temperatures and increasing levels of CO_2 . Data show that temperatures rise before CO_2 . This means that CO_2 is not the cause of rising temperatures but it is the consequence. In warm periods life proliferates and, since it is based on carbon, CO_2 levels increase. CO_2 is a manifestation of life; it is vital for life and fighting CO_2 means fighting life!

The scenario is quite simple! Temperatures fall during the ice age. The cooling is initially slowed by high levels of CO_2 . But when life succumbs to ice, CO_2 levels decrease and the ice caps expand reaching a thickness of 4 kilometers at the points of maximum accumulation in Europe, America and Siberia and the oceans levels fall around 150 meters. Life is possible only in the equatorial belt and, more precisely, in the lands that were previously covered by the oceans.

At the end of the ice age, temperatures suddenly rise. The ice caps melt in huge

interglacial lakes. The banks of these lakes break pouring immense quantities of water into the oceans that rise tens of meters at a time. The civilizations that had survived are wiped out. Reports of these floods can be found in all cultures and date back to around 12,000 years ago.

What causes glaciations?

In the 1920s Milutin Milankovitch, a Serbian geophysicist and astronomer, suggested that orbital changes could cause periodic cooling of the Earth, with the coldest periods occurring every 41,000 years. Milankovitch believed that the Earth's orbital changes were the cause of glaciations. The orbital eccentricity of the Earth changes according to a cycle of about 100,000 years and the inclination axis varies periodically between 22° and 24.5° following a 41,000-year cycle. The inclination axis is responsible for the seasons; the greater the inclination, the greater the contrast between summer and winter temperatures. The precession of the equinoxes and the oscillations of the rotation axis have a periodicity of 26,000 years. Milankovitch's model explains the changes in the contrast between the seasons, changes that are confirmed by oceanic sediments and fossils, but the overall exposure to the Sun remains the same and this does not explain glaciations. Astronomical cycles have lasted for millions of years, while glaciations began 2,58 million years ago. Orbital changes are therefore not the cause of glaciations!

Another theory⁴ argues that the reduction of CO_2 , a gas that causes the greenhouse effect, has given way to long-term cooling and glaciations. But data show that the reduction of CO_2 begins after temperatures fall. CO_2 is not the cause, but the consequence.

In 2014 it was discovered that solar emissions are not constant and that this variability correlates with glaciations. Solar cycles were discovered in 1843 by Samuel Heinrich Schwabe, who after 17 years of observations noted a periodic change in the average number of sunspots in a progression that follows an 11-year

⁴ Pagani, M. et. all., (2011), *The Role of Carbon Dioxide During the Onset of Antarctic Glaciation*, Science. 334 (6060): 1261–4.

cycle. Scientists were perplexed by the fact that each cycle was a little different. None of the models could explain these fluctuations. Valentina Zharkova⁵ found that these fluctuations are caused by a double dynamo effect between two layers of the Sun, one near the surface and one deep in its convection area. This model reconstructs past irregularities and predicts what will happen in the future.

"We found magnetic waves that appear in pairs, originating from two different layers within the Sun. Both have a cycle of about 11 years, even if they are slightly out of phase. During the cycle, the waves float between the northern and southern hemispheres of the Sun. Combining these waves and comparing them with the real data for the past solar cycles, we found that our predictions are 97% accurate."

Using this model to predict the future we see that waves will become increasingly out of phase during cycle 25, which reaches its peak in 2022. In cycle 26, which covers the decade from 2030 to 2040, waves will become totally out of phase and this will cause a significant reduction in solar emissions.

"In cycle 26, the two waves are opposed to each other, with their peak at the same time but in opposite hemispheres of the Sun. Their interference will be destructive and will cancel each other out ... when the waves are in phase, they can show a strong resonance, and we have strong solar activity. When they are out of phase, we have solar minima."

The Sun has begun to reduce its emissions. This was last seen in the mini ice age that took place between 1645 and 1715, a period known as the Maunder minimum when temperatures dropped globally by 1.3 degrees Celsius, leading to shorter seasons and food shortage.

However, Zharkova's model predicts a 60% drop in solar activity starting from the 2030-2040 period. This reduction will interfere with the Gulf stream, the air and

⁵ Shepherd SJ, Zharkov SI and Zharkova VV, 2014, *Prediction of Solar Activity from Solar Background Magnetic Field Variations in Cycles 21–23*, The Astrophysical Journal, 795:46 (8pp), The Astrophysical Journal, 795:46 (8pp), 2014 November, <u>https://phys.org/news/2015-07-irregular-heartbeat-sun-driven-dynamo.html</u>

water current that maintains warm Northern Europe and especially Great Britain. The sharp reduction in temperatures will increase snow and ice formations and the albedo will reflect the heat of the Sun, further reducing temperatures.

Extreme conditions

When solar emissions decrease, the magnetic shield that protects the planet weakens and cosmic rays enter the core, activating the magma and causing earthquakes and volcanic eruptions.

In the ocean floor there are more than one million volcanoes, against 15,000 on the surface. The magma emitted by submarine volcanoes increases the temperature of the oceans, and this causes extreme weather conditions, such as hurricanes and violent torrential rains.

Glaciations have created more lakes than all the other geological processes put together. The surface on which glaciers moves is eroded, leaving myriads of undrained depressions. These depressions fill with water and become lakes. In North America and Europe, the ice cap reached 4 km in thickness and the weight lowered the Earth's crust.

When at the end of the glacial period the ice began to melt, the crust began to bounce, producing slopes and forming large basins, such as the Baltic Sea and the Great Lakes of North America. Numerous Canadian, Swedish and Finnish lakes originated in this way.

The climatic conditions that cause glaciations have an effect on arid and semi-arid regions. Precipitations that feed the glaciers determine the formation and development of large rain lakes that develop in relatively arid regions, where there were no established drainage systems.

In Canada, the weight of the ice has created a vast depression around the Hudson Bay which is now below sea level. The same happened in Europe for the Baltic Sea.

With the melting of ice, the Earth's crust rebounds, causing unique earthquakes not associated with tectonic plates. The lifting of the crust occurs in two phases. The first is elastic and fast and can reach several hundred meters, the second is slow. Today the typical lifting rates are in the order of 1 cm per year or less.

Ice caps can become so heavy that they reach the bottom of the sea, blocking the flow of water and oceanic currents.

Since the end of the last ice age, the increase in temperatures has led the sea level to rise about 130 meters. It has remained relatively stable over the last 6,000 years.

Scenarios

Carbon dioxide (CO_2) is produced by life processes: respiration, decomposition of plants and animals, burning of wood, coal, oil and gas, and it is necessary for trees and vegetation to grow. Together with water, CO_2 is the very essence of life! Life dies with ice and dies in the absence of CO_2 !

 CO_2 traps heat and this is essential to keep the planet warm. Without this invisible blanket the average temperatures would be 18 degrees lower and life could not exist. However, ice core data show that CO_2 has never been enough to compensate for the lowering temperatures due to ice ages.

Three scenarios are possible:

- 1) Humanity will migrate to the equatorial area and build cities on lands that were previously covered by oceans, as these areas are the warmest. But when the ice age ends, ice caps quickly melt into interglacial lakes, that suddenly flood the ocean basins sweeping away what remains of humanity.
- 2) In the belief that the law of entropy (of thermal death) governs the universe, an elite is concentrating enormous amounts of energy and resources for a small chosen group that will live in shelters for the next 100 thousand years. But since

entropy is the law of thermal death, this scenario is inevitably doomed.

3) There is a law dual to entropy: *the law of syntropy*. This law is at the basis of life and leads to energy concentration and absorption. Maximizing life, reforesting, reducing entropy and promoting syntropic lifestyles, temperatures increase and glacial temperatures can be avoided. This scenario offers an incredible opportunity for the progress of humanity.

At this point a question naturally arises: Why are they terrorizing us with the narrative of rising temperatures and CO_2 , when the problem is exactly the opposite?

In the previous interglacial periods CO_2 levels were similar to or higher than current levels. This indicates that in addition to natural sources of CO_2 , industrial sources were also present. High levels of CO_2 indicate the existence of ancient pre-glacial industrialized civilizations. Although difficult to accept, it seems that none of these civilizations has managed to overcome the ice age.

Are there traces of these civilizations?

Many archaeological discoveries remain an enigma. These are called OOPARTS (Out Of Place ARTifacts). Artifacts that defy the conventional chronology or are too advanced for the level of civilization.

In the book "*The Ancient Giants Who Ruled America: The Missing Skeletons and the Great Smithsonian Cover-Up*"⁶ Richard Dewhurst presents evidences of an ancient race of giants in North America and the concealment by the Smithsonian Institution.

Thousands of skeletons of giants were found, particularly in the Mississippi Valley. The book includes more than 100 photographs and illustrations and shows that the Smithsonian Institution came, took the skeletons for further study, and then made them disappear.

⁶ Dewhurst R.J., *The Ancient giants Who Ruled America: The Missing Skeletons and the Great –Smithsonian Cover-Up* <u>https://www.amazon.com/gp/product/1591431719</u>

Scenario #3

Syntropy concentrates energy and increases temperatures, whereas entropy dissipates energy and decreases temperatures (thermal death). For millennia, humanity has chosen the way of entropy plundering the planet of its vital resources. Now we have to shift to the way of syntropy, promoting life and replenishing the vital resources of the planet.

Life absorbs energy and produces CO_2 . The absence of life disperses energy and reduces CO_2 . CO_2 is an important indicator of the quantity of life. Life produces CO_2 : our breath, our activities produce CO_2 and CO_2 has the power to keep the planet from cooling. It is an invisible blanket that wraps the planet, reducing heat from dispersing into the void. In order to increase CO_2 levels, we must increase life and the population size. The problem is not overpopulation, but under-population. The whole planet must become habitable, deserts must be turned into agroforests. We live in a planet rich in CO_2 , oil, gas and coal, with huge reserves of CO_2 that will serve in critical moments, during the peak of the ice age. It is therefore wise to preserve these reserves, switching to alternative energy sources.

Our cities were built after the Second World War using cement and are now starting to crumble. Cement has a short life expectancy and in the near future towns will need to be rebuilt choosing solutions that maximize syntropy and are suitable for the incoming ice age. The best architectural designs for the ice age are based on pyramidal structures, built with low entropy materials, capable of withstanding extreme stresses such as strong earthquakes. Not having a roof, pyramids don't have to support the weight of snow and ice. Large-scale pyramids, which host self-sufficient communities, with their own energy and heat sources, will introduce into the atmosphere large amounts of CO_2 and help counter the low temperatures of the ice age.

A small example of a pyramid in extreme cold climates has been built in the early nineties by the CNR, the Italian National Research Centre, at 5050 meters of altitude, in the Khumbu Valley, in the Sagarmatha National Park, at the foot of the Everest on the Nepalese side. The CNR built a glass pyramid named Pyramid Ev-K2-CNR.



www.evk2cnr.org

It is a pyramid of negligible size compared to those that will be needed during the ice age. However, it is located in a glacial environment and shows that the pyramidal shape allows to combine stability and resistance to atmospheric agents and earthquakes and the glass coating ensures the greenhouse effect that facilitates the concentration of solar thermal energy despite the glacial temperatures of the surrounding place. It is a totally self-sufficient structure.

The Ev-K2-CNR pyramid is a laboratory and observatory located at 5050 meters above the sea level, on the Nepalese side of Mount Everest. It is universally appreciated for the studies it allows to do at high altitudes. Ev-K2-CNR uses a methodology that favors sustainable development in extreme climatic and environmental conditions. Studies that require extreme conditions can be conducted at the pyramid which has become the object of interest of numerous national and international scientific institution, over 200 scientific institutions, universities, organizations and research institutions. Thousands of scientific missions and more than 400 researchers from all over the world carry out their scientific researches every year at the CNR pyramid.

It might be just fake news, but in 2012 a leading oceanographer, Dr Meyer Verlag, claimed to have found not one but two gigantic pyramids, three times the size of the Great Pyramid of Giza, on the ocean floor in the heart of the Bermuda Triangle. Dr Meyer found the pyramids during a routine oceanographic survey in mid-April 2012 and he reported the discovery on the 29th of April, after he finished checking and

rechecking the data. His report to the scientific community and to newsmen in Freeport, Bahamas, included maps and sonar readings.



Dr Verlag stated that the pyramids appeared to be made of solid glass and were in such good conditions that he was almost certain that they were built within the past 50 years:

"Sonar readings taken from the surface indicate that the two pyramids are uncommonly large and in perfect condition. That would seem to indicate that the pyramids were built within the last 50 years or so and leads to more pressing questions such as who made them and why."

At the press conference held in the Bahamas he gave the exact coordinates of the pyramids, 800 miles east of Miami:

"Sonar data indicated that the bases of the pyramids are 2,000 feet (600 meters) wide. They stand almost 700 feet high and are roughly double the size of Egypt's Great Pyramid of Cheops. A superior technology is needed to build these pyramids. Whoever or whatever built them clearly had underwater capabilities far superior to our own. And while there's always room for error, our sonar readings suggest that the pyramids have the texture and density of glass which is most unusual indeed."

It seems that Pyramids are scattered across the planet, from America to Asia, archaeologists have found that nearly all ancient cultures built massive pyramids thousands of years ago. Some of them served as tombs, while the purpose of many other remains a mystery.

It isn't therefore surprising to learn that pyramids have been found also in Europe. The Bosnian Pyramid Complex was built by an unknown civilization near Sarajevo, the capital of Bosnia and Herzegovina.

These pyramids were discovered in 2005, by Dr. Semir Osmanagic, beneath the hills of Visoko. A pyramidal complex which in addition to being one of the largest on Earth, was interconnected through a network of underground tunnels. Dr. Osmanagic claims that these pyramids provide the traces of a lost civilization. His thesis holds that the Mesoamerican, the Egyptian and the Bosnian pyramids are the work of the same people and that the pyramidal complex in Bosnia could be "the mother of all the pyramids." In 2006, a great project was set up to restore the top of the Pyramid of the Sun, which Dr. Osmanagic assures is the most important of the four Pyramids measuring 360 meters in height. The Bosnian Government made available the necessary funds for the excavation work in the Visoko region.

The decision of the Bosnian Government to fund the project raised a controversy in the European Association of Archaeologists, which in 2006 wrote the following letter against the decision of the Government of Bosnia and Herzegovina:

"We, the undersigned professional archaeologists from all parts of Europe, wish to protest strongly at the continuing support by the Bosnian authorities for the so-called "pyramid" project being conducted on hills at and near Visoko. This scheme is a cruel hoax on an unsuspecting public and has no place in the world of genuine science. It is a waste of scarce resources that would be much better used in protecting the genuine archaeological heritage and is diverting attention from the pressing problems that are affecting professional archaeologists in Bosnia-Herzegovina on a daily basis."

The letter was signed by Hermann Parzinger, President of the German Archaeological Institute in Berlin, Willem Willems, Inspector General of Rijksinspectie Archeologie in The Hague, Jean-Paul Demoule, President of the Institut nationale de recherches archéologiques préventives (INRAP) in Paris, Romuald Schild, Director of the Institute of Archaeology and Ethnology of the Polish Academy of Sciences in Warsaw, Vassil Nikolov, Director of the Institute of Archaeology of the Bulgarian Academy of Sciences in Sofia, Anthony Harding, President of the European Association of Archaeologists and Mike Heyworth, Director of the Council for British Archaeology in York.

Pyramids made of transparent absorbing materials, in extreme environments such as those of the ice age, would maximize the absorption of energy and heat. Not having a roof, snow or ice do not accumulate. Their broad base makes them stable and durable. When solar emissions diminish, the magnetic shield that protects the planet weakens and cosmic rays increase and activate the magma and earthquakes of strong intensity. Transparent pyramids can be self-sufficient from an energetic point of view and for food. They need air from outside and releases CO_2 and heat. Exactly what is needed during the ice age. Depending on the conditions of the land the height could even reach a thousand meters with a square base of two kilometers per side. These pyramids can shelter special environments from the weight and destructive effect of ice. For example, a city like Rome, would be reduced to dust by the weight of the ice and its slow motion. Old historical places could be incorporated into the ground floor of the pyramids.

Pyramids of these proportions could be divided into levels up to 50 meters high. Independent levels with buildings, open spaces, gardens and public places such as piazzas, recreational and commercial areas, surrounded by nature and without mechanical noises and pollution, with trees, green area, birds, fishes and pets that can keep people in contact with nature. Unlike cities built using skyscrapers, where there are frequent deficiencies due to low exposure to the Sun, the shadow of the pyramids does not cover the other pyramids. Inhabitants of the pyramids will receive a fair exposure to the Sun, with considerable benefits for their health.

Structures of this kind could accommodate a hundred thousand people each. The excess heat, produced by the absorption of the Sun's rays and by the activities inside the pyramid, would be used to melt the snow, thus providing drinking water for life and its activities. According to some simulations, one million pyramids could compensate the effects of the ice age. They would occupy a total of three million square kilometers, one-fiftieth of the land of the planet. Some pyramids could be used only for productive activities or activities aimed at regulating the CO_2 levels of the planet.

They would be built using "soft matter" which is a material capable of withstanding the entire ice age and the most adverse conditions. A lightweight material that can repair itself and which has a positive energy balance. It is made of DNA which is highly resistant, flexible and can maintain the structure intact, autonomously, activating self-healing processes. Instead of following the law of entropy, that is thermal death and disorder, soft matter responds to the law of syntropy, concentrating and absorbing energy and heat. Just what is needed during the ice-age.

Did any previous civilization try Scenario #3

High levels of CO_2 indicate the presence of life. In the following graph the start of the last ice age is in a rectangle, so that we can compare the drop-in temperature with the CO_2 levels. When temperatures fall also life diminishes reducing the levels of CO_2 . On the contrary at the beginning of the last age CO_2 levels stay high. Although temperatures are glacial, life continues to survive! This is possible when scenario #3 is intentionally implemented by a highly advanced civilization. But we see that after approximately 20,000 years of the ice age CO_2 drops and life starts to extinguish. Why wasn't scenario #3 enough to preserve life on the planet?



Probably something more is needed to compensate the decrease in temperatures, such as structures that can capture the heat of the Sun and send it towards our planet.

The idea of permanent structures capable of withstanding thousands of years of service, that would divert the Sun's energy towards our planet was first described by Olaf Stapledon in his science fiction novel *Star Maker* published in 1937, in which he described "every solar system... surrounded by a gauze of light traps, which focused the escaping solar energy for intelligent use." The concept was later popularized by

the mathematician and physicist Freeman Dyson in his 1960 paper "Search for Artificial Stellar Sources of Infrared Radiation." Dyson speculated that such structures would be the logical consequence of the escalating energy needs of a technologically advanced civilization and would be a necessity for its long-term survival. He proposed that searching for such structures could lead to the detection of advanced, intelligent extra-terrestrial life. Different types of Dyson energy-harvesting structures would denote different levels of technological advancement.

According to new astronomical observations, stars that show repeated bouts of darkening might be circled by harvesting energy structures. The first star with this behaviour was discovered in 2015 when scientists noticed unusual fluctuations in the light from a star named KIC 8462852. Now we know over a thousand stars with this behaviour. Our galaxy seems to be populated by thousands of highly advanced civilizations!

Final remarks

Glaciations can become incredible opportunities for the progress of humanity. The challenges are immense. Only working together for the survival and wellbeing of humanity will allow to overcome these challenges.

However, we now hear a totally different narrative and instead of working together we are taught to compete and fight others.

In 1284, while the town of Hamelin (Germany) was suffering from a rat infestation, a piper dressed in multicolored clothing promised that he could solve the problem. The mayor assured that for the removal of the rats he would pay the sum of 1,000 guilders. The piper accepted and with his music attracted the rats into the Weser River, where they all drowned. Despite the piper's success, the mayor did not keep his promise and reduced the sum to 50 guilders, blaming the piper for bringing the rats himself in an extortion attempt. Enraged, the piper swore revenge and on Saint John and Paul's day, while the adults were in church, he returned dressed in green like a hunter and playing his pipe. The 130 town's children followed him out of town and into a cave and were never seen again. Only three children survived: one was lame and could not follow, the second was deaf and could not hear the music, the last was blind and was unable to see where he was going.

People are now being attracted, like rats, towards mass extinction in the attempt to keep them away from scenario #2 which is aimed to save only a limited elite.

The third scenario where humanity as a whole survives, requires that we become deaf, blind and lame towards the music of these pipers.