



The Solari Report

August 16, 2018

Solari Science Report The Wave Genome with Ulrike Granögger





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Intro:

Welcome again. This is our second Science Report at Solari, and I am happy you are joining me today.

In this report we are going to look at the physics and quantum physics of the Genetic Code and its implications, a perspective that is more and more replacing the traditional biochemical approach to living organisms. After all, any biochemical molecule consists of atoms and subatomic particles which themselves are nowadays regarded to be quantum fields of ultimately 'nothing' subject to mathematical and vibratory laws of interaction. How this nothingness gets to build a quasi-stable, living, and more or less intelligent 'something' is, of course, still a mystery, but to evidence and experiment with DNA (and kindred organic molecules) as stable electromagnetic and acoustic wave forms certainly gets us closer to a more comprehensive understanding of life.



Ultimately, we are probably made of just space, time, and energy, or space, time, and consciousness, but until we can handle this thought both theoretically and in practical terms we will have to contend with this biological body on the level of our current insights. So, any true researcher welcomes the expansion of a ruling paradigm. Yet, a lot of the ideas and evidence presented in this summary of what could be called "Quantum Biology" are still not taught at schools and are often ridiculed by the main-stream opinion makers or infiltrated with half-truths.

It's good to see, however, that at least the agencies that conduct classified and defense funded research and development seem to be well aware of the evidence and its implications... so that we may eventually have ground-breaking applications in hand – all to our advantage, of course.

Most of the ideas discussed will center around the publications of Russian biophysicist Peter Gariaev and extensions of his findings. (Photo: Here I am meeting with Dr Gariaev in Moscow inviting, him to speak at our conference the following year.) Gariaev is probably best known from among the alternative researchers, but there are others, and my aim is to bring some pieces together that will hopefully create or support for you a new or different understanding of the Genetic Code and ultimately of yourself.



I encourage you to pause and reflect often, and not to view the report in one session. Synthesise the different aspects presented in your own mind and bring them together to realise that a holographic nature of DNA has far-reaching ramifications in all kinds of areas.

While this report is not primarily for scientists, who may know some of the topics much better than I, it is still going to be somewhat demanding of the concentration of the viewer. Best to watch it in 3 or even 4 instalments and rather follow up on some of the suggested reading by looking up the websites quoted or the terms mentioned.

Or, you may just want to close your eyes and listen to the story and do some of the study later...

To give you a "Table of Contents" of sorts: We will begin with a summary of the chemical paradigm and its limitations, which will take us to a look at the vibrational and electromagnetic aspects of biology, including biophotons and acoustic coherence in the cellular membranes and the cellular water. Thus, we will discover that the genetic phenotypes or morphologies can be triggered by electromagnetic fields, and that DNA has profound linguistic characteristics with implications for future computing and AI. In the final section, we will focus on some specific experiments and their results, including the work of Peter Gariaev, Luc Montagnier, and Tsian Kanzhchen.

Enjoy.



PART 1: The Old and the New Paradigm

First let's take a short look at the standard ideas about the genetic code, the double helix, which was discovered in 1953.

Our newest estimates give 37 trillions of cells in the human body. And most of these cells contain a nucleus with the 46 chromosomes that are the wound-up double helices. The double helix itself is consisting of 2 strands each having what is called a backbone of sugar and phosphate molecules. The sugar or pentose – so called because of the pentagonal structure of the arrangement of the atoms in the molecule – actually is instrumental in making the helix, in making the turn of each of the strands as it winds and spirals. As you can see the pentose molecule has different polarity or polarization, and it is these molecules that are *optically active* and polarize the light coming in, allowing for the twist or turn of the double helix.

Between the backbones are the actual coding molecules, namely the four nucleotide bases Adenine, Guanine, Cytosine and Thymine, that in groups of three – so called Codons – will provide the actual genetic code. These codons or groups of three nucleotides are the coding units for individual amino acids which in long chains produce the proteins of which the organism is made including our human body.

The four nucleotide bases are held together by hydrogen bonds – the same type of hydrogen bonds that also hold water molecules together or can rearrange water molecules into liquid crystal clusters.



Please make a mental note of the fact that the genome exists in cellular water structures. There is generally an ordered structure in the layer of water molecules immediately surrounding a protein.

Since the discovery of the code, the idea prevails that all the information is stored in the nucleus of the cell in the form of genes. There are about 24,000 genes that are actively coding for the functioning of the human body, actively coding for the proteins.

Considering how young our understanding of DNA is, it has been a wonderfully successful model – as we all know. But still there are certain aspects that are not explained. Usually they are simply not mentioned in the text books or when you look at Wikipedia. It is primarily two questions, namely: The understanding of the genetic code as we have it does **not** explain *cell differentiation*. Namely the question is: If every cell essentially has the same the genetic information available as every other cell, how does it decide to become a liver cell or a bone cell or a skin cell? What gives it the information to decide the topology or geometry of its function and its position in the body?

The second important question that is left open is: Why are there only 2% of the genetic code that seem to be actively coding for proteins? 98 percent of the genetic material has for a long time been regarded as a type of graveyard of outdated information, no longer in use, selected out during the timeline of evolution. It seems that we are carrying around a lot of 'garbage', originally even termed 'junk DNA' –



– although this term is no longer so much in use and only recently ‘non-coding DNA’, as it has come to be called, has become part of certain considerations such as with the ENCODE project.

Still, there is no consensus on what role it plays, if any. But, is it really possible – almost like in cosmology where 95% of the cosmos seems to be dark matter and dark energy, not registered by our scientific instruments – that also in biology, only 2% of the genetic material has meaning, and the rest is meaningless, to be discarded?

We will see in the ‘Wave genetic’ approach discussed in this report that this is most likely not the case. The normal paradigm of genetic information looks at the material side of the genetic code – its chemistry, the sequence of the codons and nucleotides. Even the genetic engineering that has become so successful is done by chemical procedures or synthesising and recombining genetic sequences, such as the famous CRISPR-Cas procedure for controlled genome editing.

That’s been the perspective: to focus solely on the biochemical or matter side of the DNA. But this material and bio-mechanical paradigm is shifting, and it’s making way for an increasingly immaterial, biophysical, field-based, and quantum-mechanical paradigm of information storage and transfer through DNA.

Stem cell research has already uncovered that a more fundamental level of genetic information is present in the genome as each cell can be returned to a type of ground state or universal pluripotency for a guided differentiation into any other type of cell. But the leap to a more electromagnetic or field-like, even holographic, understanding of DNA has yet to be made.



After seeing and studying the experiments that we are about to present, it will be totally clear that we are composed of ultra-stable field structures, of *images* of information intelligently combined in the continuous state of flux that we call life. The chemistry and material structure of the atoms and molecules will appear only as the carrier for a wave-train of information that acts and exists from fundamental domains of magnetic fields, gravitational interactions, and quantum physical principles.

Much, or even most of this understanding, has come out of Russia. It seems that the Russians, particularly in the cold war period, confined to state-managed research ultimately had more freedom to pursue unorthodox experiments and trains of thought than the Western science labs, who were and are paid by market-oriented and military-industrial interests.

So it was Alexander Gurvich who suggested already in the 1920's – which, by the way, was the time when quantum physics and field-views of reality were only being developed – that the cell emits ultra-weak electromagnetic radiation or biological photons that he considered as the prime guiding factor of self-organization in mitosis and morphogenesis. This was later famously confirmed and technically measured by Fritz Albert Popp of Kaiserslautern University in Germany, who actually recorded the light coming from the cell in the visible and ultraviolet frequency range, primarily emitted by the chromosomes in the nucleus of the cells. Critically, this light is *coherent light*, an ultra-weak *laser* light from the cell and not thermal or ambient light.



Biophoton emissions have since been confirmed by many studies, and most importantly have been found in the central nervous system and the brain, making the brain possibly a light computer.

In the following, I'm going to show you a short excerpt of a documentary on Fritz Albert Popp's work:

In search of scientific evidence for this, we visit the Kaiserslautern Center for Technology in Germany where for years the researchers here have been measuring the light every living cell radiates. The emissions are called biophotons because they are given off by all living organisms.

In total darkness, the glow of this small leaf is made visible by increasing its intensity by a factor of 7 million using modern equipment. It is made possible by an amplifier built especially to create this film footage.

This is the light of life emitted by a tiny leaf. You can see its outline. This is the glow from a blade of grass – the first film footage recording life's light, colored light surrounding an organism.

In Dr. Fritz Albert Popp's lab, they are trying to unravel the mystery of how nature uses this light. In blood, for example, the defense cells are separated out for the experiment. The light of life is no ordinary light. It's a bit like nature's laser show. Cells use the light to communicate with one another. Usually, you can't see the glow of the defense cells. That changes immediately when the cells go into action.



The bright glow is the alarm signal. Dr. Fritz Albert Popp explains, “Based on the many results that we now have to interpret, these light signals have the ability and function of optimizing chemical reactions. To bring about an improvement or activation, to make the system as efficient as possible, to inform the individual parts – which are a great distance away from each other – who does what and where. This coordination, which cannot take place purely through a chemical reaction, can be controlled via the light.”

Information at light speed. One example of this can be shown through an experiment with eggs. The researchers want to compare chicken eggs from caged hens with free-range eggs. Can the two types of eggs be distinguished by the light they emit? Biochemically, there is no difference. The researchers take a measurement using especially light-sensitive equipment. If a difference can be demonstrated, that means that the hens’ different lifestyles can be determined through light output. More simply put, do the eggs of happy hens have a different glow than those of their caged comrades? It is a critical question for egg consumers as well as egg producers.

All of the data is analysed by a computer. The experiment must be run following strict scientific procedures. It must be able to be tested at any time repeated anywhere in the world.

The results are indisputable. The eggs from the caged hens don’t emit even half as much light as the eggs from the free-range chickens. It’s not difficult to imagine how terrible a life like this in captivity is. But more than that, the fact that these hens’ negative as well as positive life experiences are emitted constantly, as light from their eggs is a scientific sensation.



Dr. Fritz Albert Popp comments, “The new thing that we see here is that small differences in the chickens’ environment lead to completely different light measurements. That is surprising because one can’t identify a biochemical connection.”

Dr. Popp’s biophoton research is based on strict scientific standards and international cooperation with 16 working groups. In Japan, over \$100 million has already been invested in this field. The results are spectacular and are opening the door to completely new areas of research.

Can you imagine that a rigorous scientist of the focus and integrity of Fritz Popp was ridiculed and vehemently attacked by peers and not taken seriously by many of his colleagues of physics who implied that there simply cannot be *order* (for laser) in the heating bath of the body. All of the biochemical reactions and processes in the body are assumed to work in a 'thermodynamic equilibrium' meaning that biochemical reactions are ultimately guided by entropy or the random collisions and interactions of molecules in a given biological temperature.

And yet, given the understanding that the coherence length of sunlight on the earth's surface corresponds with the dimensions or size of the biological cell, makes coherence on a cellular scale and below very feasible. The idea of coherent light emitted from the cell is not so far-fetched. Biological organisms have evolved and developed for millions of years within the magnetic field of the earth, at a certain distance from the parent star, our sun, so that the cellular structures and living architecture is precisely tuned to the energy distribution in the heliosphere.



PART 2: Foundations for Quantum-Holography in the Cell

The next and likely most important researchers about the cosmophysical field nature of life and DNA in Russia were Nikolai Kozyrev and the eminent Vlaiil Petrovich Kaznacheev, both of whom have contributed such innovative and groundbreaking work that it will require a separate Solari report.

I've had the opportunity to work with the Institute of Cosmic Anthropoecology ISRICA in Novosibirsk and was instrumental in publishing Kaznacheev's monograph for the English-speaking world.

Kaznacheev discovered the 'cytopathic mirror effect'. This is a distant interacellular electromagnetic interaction between two tissue cultures – one of which was subjected to a detrimental biological or chemical agent such as a virus or a poison. The two cultures were in sealed containers with only an optical window between them.

With glass as the optical window between them, the infected culture would die while the other culture remained healthy. But when a quartz crystal window was placed between the cell cultures – and we need to know that quartz crystal glass allows ultraviolet light to pass through – some 12 hours later, the disease also appeared in the healthy culture. The effect could be transmitted even further to a third culture that never physically came in contact with the poison or virus! This was very clear indication for electromagnetic communication between living cells.

Much of what we are going to talk about today has its origin in Novosibirsk. Peter Gariaev's work also takes its origin in the school of this esteemed Institute.



Let us now turn to what Gariaev found: The first indication of DNA holography was discovered in experiments in 1985. The findings were published in English only in 1991, and later described in greater detail in 1994 in Peter Gariaev's book *The Wave Genome* in Russian. A now famous article that made its way to the internet was published by Vladimir Poponin in 1995 working with the Heart Math Institute, but using the material of Gariaev. What was it that they found?

The discovery was made as a side effect of experiments that were looking at the vibration modes of DNA in solution. They were using a *dynamic light scattering Laser* or spectrometer. This is a device that examines how material scatters light which provides insight into the behaviour of the material. So the impacting laser light is diffracted, showing how the particles of different sizes have a unique scattering signature.

The first graph shows the control measurements before the DNA sample is put into the scattering chamber. Obviously, only very few and randomly distributed photons can be detected.

When the physical DNA sample in a solution is placed into the scattering chamber, the characteristic wave form or photon signature is recorded. But the important discovery was made when the actual physical sample of DNA was removed from the scattering chamber and still – for a while – a regular photon image was registered in the now empty dark chamber.



So without any material present, a phantom was recorded and if the space in the scattering chamber is not disturbed, this phantom-like memory could be measured for up to a month. Think about that! The presence of DNA creates not only its own coherent light field but also makes an imprint on to the background of seemingly empty space – and does that so clearly that the informational imprint, its state of order, was still retrievable hours and days later.

That means that your own presence in the room will always leave its signature, its memory. And this is how it can be that a very loving or otherwise coherent person will leave their imprint in a house or situation for a long time.

This could be defined as a form of entanglement of the biological atoms with the background field, thus manifesting as a non-local – namely literally ‘not there’ – phenomenon. In terms of physics, of course, this requires the existence of some kind of vacuum field, something that was decried for a long time but is now established as the concept of the Zero-point Fluctuations that Quantum Field Theory embraces. (Visit Youtube video recommended.)

The coherence or order of the DNA, and as Gariaev believes, the information coded in the *spin states* of the ordered particles, interact with the Zero-point fluctuations and elicit particle fields from the physical vacuum. It also indicates that the DNA molecule is transmitted as a single waveform creating quantum spin interference patterns with the vacuum.



An implication is that ultimately DNA could be transferred or transported – let us say ‘teleported’ – immaterially and non-locally as a light or laser modulation.

That in principle a quantum teleportation of biological molecules is feasible was shown already in 2003 by the group of researchers around Anton Zeilinger, famous for quantum teleportation experiments at Vienna University. They created interference patterns of heavy $C_{60}F_{48}$ fluorinated fullerene molecules, and in 2011 of even bigger molecules consisting of up to 430 atoms that demonstrated that even classical objects – molecules – have a type of wave nature.

Before we look at the experiments and the phenomenal results that strongly suggest a wave nature of the biological molecules such as the DNA in particular, let us try to create more of the scientific framework that will allow us to understand and describe what is going on.

Whereas current genetic theory focuses on the 24,000 active coding genes in terms of chemistry the new model regards DNA as a stable waveform of information that is not primarily acting through the molecular chemistry and composition, but through the oscillations and coherent acoustic and electromagnetic fields that the atoms and molecules create.

There exists a complex interference pattern at the cellular and sub-cellular level, produced on the one hand by the mechanical or elastic vibrations of the atoms and molecules in the liquid-crystal hydrogel environment which would entail Fröhlich-like wave patterns —



— or phonons within the tiny tubes and cavities of the cell organelles such as the microtubules, the mitochondria, the electric dipole lipid membranes, or in the geometry of the DNA macromolecule itself. These vibrational interference fields can overlap and produce standing wave patterns of micro sounds or acoustic waves inside the cell.

Fröhlich-type wave patterns or ‘Fröhlich condensates’ are almost like Bose-Einstein condensates but at high temperatures. A Bose-Einstein condensate involves the overlapping of de-Broglie wavelengths of particles or matter waves to such an extent that the whole system can be described by a single wave function.

German physicist Herbert Fröhlich predicted in 1968 that biological proteins and membranes could enter such a state when excited through metabolic pumping, i.e. energy uptake which would result in coherent excitation frequencies that act like macroscopic quantum states.

We read from an article by Mae-Wan Ho:

The excited molecules/membranes will vibrate at various characteristic frequencies resulting from the coupling of electrical displacements to mechanical deformations. This eventually builds up into collective modes (coherent excitations) of both electromechanical oscillations (phonons, or sound waves in solid medium) and electromagnetic radiations (photons). The possibility arises that organisms may actually use electromagnetic radiations to communicate between cells or between different organisms.



These Fröhlich oscillations inside the microtubules as well as in possibly other structures and molecules of biological importance are also part of the theory by Stuart Hameroff for a basis of consciousness.

It was recently supported by the New Jersey Institute of Technology and Yeshiva University in Israel, showing that microtubules seem to have particular frequencies stored at their edges. The researchers were looking at the topological phonon edges of microtubules which are quanta of sound energy or vibration at the very edge of the surface of a material. This plays a role in super-conductivity, and is related to a special class of subatomic particle, the so-called Majorana fermions. (Majorana, by the way, are part of the theory to explain dark matter and may be related to neutrinos. It's not yet clear if neutrinos are actually Majorana particles.)

It's showing us that there may be a component of *super-conductivity* involved along the edges of the cytoskeleton!

Here you can see 3 different frequency bands that are found along the edges of the microtubules. This is a video by Anirban Bandyopadhyay, Senior Researcher at the National Institute for Material Science in Japan, showing frequencies in the kilohertz, megahertz, and gigahertz range.



It is that these edges that one can find the ‘fourth phase’ of water or the Exclusion Zone of Gerald Pollack’s research that shows that the cytoplasm is composed of a particular type of intracellular water, structured water, a liquid-crystal-type of water in the cell that facilitates energy and information transfer.

A layer of ordered water around the microtubules was first reported by L.A. Amos in 1979. A strong electric field is also formed around mitochondria which are aligned around microtubules. So the acoustic Fröhlich condensates vibrate and structure the watery environment inside the cell.

The ordered water in the region of the electric field along the membrane forms a gel-like structure which allows for a high excitation of intracellular vibrations. This gel region also shows higher pH-values and comprises several layers of water molecules so that it can take on macroscopic dimensions.

A decrease or loss of membrane potential along the edges changes the water ordering around the microtubules and mitochondria and is indication for a decrease in the energy pumping. Now it is interesting to note that Otto Warburg pointed out that dysfunctional mitochondria will switch to produce energy from fermentation rather than oxidation or proton transfer to the inside of the mitochondria. ATP production by fermentation takes place outside of the mitochondria in the cytoplasm when the cellular water is no longer structured and pH is acidic. It is very likely that this reversed form of ATP production and cytoplasmic acidity is the cause for cancer.



Importantly, however, it has been shown that the water ordering can also be achieved by an electric field of *external* source. Researchers at the Institute of Physical and Theoretical Chemistry in Graz, Austria report on a floating water bridge between two glass beakers that was created by applying a high-voltage direct current electric field. The water can climb out of the container and walk across the air to the other beaker. The length of the floating water bridge was up to 3 centimeters. Inside the water bridge Elmar Fuchs and Jakob Woisetschläger observed high-frequency oscillations of different velocity than the surface waves. Thus the bridge acts as a waveguide.

The cellular water and cyto-protein structures and membranes take on properties that are now studied in areas such as mechanobiology and meta-materials – materials with unusual electromagnetic properties. Researchers at the Georgia Institute of Technology, for example, have demonstrated that hydrogel nanoparticles or gel materials such as you find in the cells can be used to form *photonic crystals*, which can be tuned for telecommunication through the crystalline lattice.

If it is possible to guide the photon through the crystalline lattice, it can be used as a ‘photonic computer’.

I know this is a lot of technical information. But please don't switch off, rather pause and think about this for a moment. Try to understand and visualise what is going on – right now – in your own cells. There are highly-ordered, negentropic processes in each of our cells right now that have the ability to establish long-range communication links across membranes through water bridges and stable waveforms.



This is not the chemical action potential of neuron signaling but a much faster, coherent wave-train that employs quantum-mechanical characteristics. All the cells are in coherent communication with each other based on the liquid-crystal vibration patterns in the cellular architecture.

It is upon this vibrating lattice that the holographic, image-like bio-information rides. I consider it more than an analogy that we were created 'in the image' of a divine master blueprint.

Remember that together with the Fröhlich condensate of phonons or micro-acoustic vibrations, there is also the coherent cellular biophoton field according to Fritz Popp that generates laser interference patterns which are the very basis for the manifestation of quantum-holographic processes in the highly ordered milieu of the interior cell.

You kind of have two layers of constructive interference patterns – one acoustic, the other electromagnetic – that seem to generate complex holographic images and wave structures that can be maintained for a long time. This can be regarded as a new type of 'video' system encoding DNA in several layers that remain intact across various domains.

The DNA here acts both as an antenna or receiver as well as a sender of genetic images, with the image itself not being stored as a molecular chemical text but as an interference pattern, a quantum hologram of acoustical and electromagnetic waves. Gariaev considers the DNA as a 'soliton', an ultra-stable wave train travelling along the complete molecular lattice.



The molecule as a whole becomes a harmonic quantum oscillator and as such will be seen to have resonance coupling abilities with all scales of the universe.

The observation that the genetic information is not actually stored INSIDE the DNA but may be simply read by the laser properties of the coherent particle behavior of the biopolymers from a library that is stored somewhere else is corroborated by a unique discovery of two scientists of Ciba-Geigy (now Novartis) in Basel, Switzerland.

Guido Ebner and Heinz Schürch placed seeds or germ cells of different species into an electro-static field, DC voltage fields, much like we have them naturally in our atmosphere in a thunderstorm or as they occur between membrane dipoles in the cell, only they created fields of an intensity of up to 10,000 volts.

The seeds remained in the electro field for about three days (or sometimes longer), and then were allowed to sprout and grow. The resulting plant or organism displayed a striking phenomenon: Modern-day maize seeds, for example, will develop up to five ears in one place where normally only one cob develops. This is how maize grew in much earlier evolutionary times. Genetic characteristics that had been lost through cultivation or crossbreeding were brought back and were continued into the following generation of the same plant.

The same happened to the modern day wood fern whose spores were treated in the electrostatic field: It reversed its evolutionary history and grew into a different phenotype of a fern that grew millions of years ago, but no longer today.



Chemically and genetically, the wood fern was still the same, but its shape and appearance had jumped back in time. How is that possible? Unless the genetic information is stored somewhere else – possibly in the helio-geo-magnetic field – or will at least require a coupling with this background field to access the 'current' version of a plant.

The eggs of modern rainbow trout were treated in the same field and surprised the researchers again. The fish born from the treated spawn *reversed back in time* for 150 years to manifest a phenotype of trout that since has become extinct: It has a larger underjaw, different colouring, is much larger in size, and displays a much less domesticated behaviour than modern farm trout. It also does not need all the antibiotics that farm fish needs to survive.

The current paradigm of genetics cannot explain the phenomenon.

Is evolutionary history recorded in and perhaps even controlled from a surrounding field? Could we access different stages of development by fine-tuning the electric field treatment? And if the genetic image exists as a resonance in some kind of vacuum field, can it be updated and changed by waveforms alone? Could, in principle, a holographic genetic image be inserted into the magnetic field of another planet and trigger life somewhere else?



Ebner and Schürch both died unexpectedly in 2001, and their research that was even presented on Swiss and German TV in the 1990's is no longer talked about. After patenting the discovery and method, Ciba Geigy discontinued the research. Of course, we must consider that the same company also produces the fertilisers for maize growing and the pharmaceuticals for trout farming.

PART 3: Language Properties of DNA

Please consider, with all that has been said above, that this would imply and suggest at least two important aspects: First, that the genetic information does not lie only in the individual chromosomes within the nucleus of each cell, but is also *fractally distributed* and realized by the complete 'chromosome continuum' or quantum field of the whole organism with each manifestation of the chromosome set being in communication with the oscillating holographic field of all other sets of chromosomes in each cell.

You are not just a conglomerate of individual cells, but yourself a standing wave form of acoustic and electromagnetic information that is quite literally re-creating and rebuilding itself continually from the vacuum.

Furthermore, this chromosome continuum throughout the organism obviously does not only have a *spatial* extension inter-communicating throughout the body and even beyond, but also a *temporal* component communicating important sequences of information across generations of a specie type.



It is a lateral and longitudinal space-time quantum-holographic process.

Secondly, the results of the phantom DNA experiment imply and suggest that the code is not only contained in the coding genes, but its enactment also requires the rest of the DNA, the 98%, its non-coding parts, so called introns or 'junk' that do not have obvious functions, but that provide the context for the expression of the gene texts in the cell.

In an article that I wrote in 2008 on exactly this topic, namely the *Holography of the Genetic Code*, published in German in a book on Global Scaling, I pointed to the work of 'chaos game representation' to visualize the order and pattern of DNA.

There is very clear indication that the genetic code or DNA is a fractal. The chaos game representation of Joel Jeffrey and other researchers has shown that the sequence of nucleotides in the genome is not random or following the Boltzmann constant but displays global patterns and long-range correlations that linear perspectives do not show.

Here we see the chaos game representation of a region of the human chromosome 11 which exhibits a characteristic fractal pattern. You can see in the upper right quadrangle this reddish area and its repetition on a smaller scale in other squares. Such scale-invariance is part of a fractal process.

Chaos Game representation works like this: You assign the four nucleotides Adenine, Guanine, Cytosine, Thymine to the four corners of the square.



Then you plot all of the nucleotides in their sequence, starting from the center and moving halfway to the corner of base one. From there, move halfway to the corner of base two, and so forth. Every point in a CGR thus represents one of the nucleotides.

What is found in these self-similar patterns is that there are *long-range correlations* that extend across thousands of base positions and indicate the existence of a superior *context*. The correlations exist primarily in the non-coding sequences of the genetic material which is evidence that the 98% of seemingly ‘useless’ DNA have organizing and context-generating information.

An additional fractal or self-similar pattern of the DNA has been found in its 3-dimensional structure. Researchers of so-called mechanobiology are slowly discovering that also the spatial organization of the chromosome is critical for regulating the genome. The 3-dimensional organization of the chromosome – a double helix of almost two meters length folded down into an area of only two nanometers – follows what is called a ‘Hilbert curve’, one of a family of shapes that can fill a 2-dimensional space without ever overlapping.

The mathematical intelligence of this molecule is quite extraordinary, both in terms of group theory, as well as in terms of its geometric topology as seen here.

Keeping in mind that fractality and self-similarity are properties of holography, let us go back to the context-providing long-range correlations that entrain the coding and non-coding sequences, fractally distributing the code across the complete genome and not just the genes.



Such long range correlations are also an acknowledged characteristic of *human* language texts.

Context is a fundamental condition for error free transmission, that is, the reproducibility and intelligibility of information. Several studies address the surprising precision of RNA transcription, namely the copying of genetic information for protein synthesis or cell division, pointing out that statistically the high degree of fidelity in transcription cannot be random, but suggests correcting and steering mechanisms that would ensure that the transcribed blueprints are properly understood — in particular, in view of the high ambiguity of the protein coding units which contain homonymic and synonymic sequences that do not provide an unambiguous recipe for protein synthesis. *Homonyms* in the genetic code are areas when different amino acids are coded by the same triplet units. *Synonyms* are cases when different triplets or codons code for the same amino acid.

For example, it was clear very early after the discovery of the genetic code that the triplet Uracil-Uracil-Uracil codes for both phenylalanine as well as leucine. It is furthermore understood that only the first two digits of the triplet are the defining units, so that different codons can code the same amino acid. This is one of the main difficulties pointed out by Gariaev: Given the widespread synonymy and homonymy of coding units, how does the cell decide which proteins need to be synthesized? And how does it decide so quickly? We must assume a superior, quasi-intelligent bio-computational structure of *context* that is derived from the genetic code as a holographic whole and not just from a small part of 2% of active genes.



Ignoring this context and only working with the genes, Gariaev says, leads to erroneous and dangerous products of genetic engineering, among which the most striking are Craig Venter's *Cynthia Bacteria* and GM foods.

It is like in a literary text where the reader or recipient understands meaning of individual words from the overall context of the story. Indeed, it turns out that DNA has the *statistical properties of natural languages!* Texts of natural human languages are characterized by a particular frequency distribution or power law of their constituent elements which is defined by Zipf's law.

In 1949 George Kingsley Zipf observed a statistical phenomenon requiring that the number of words or letters that occur n times in a text will decay with the inverse square of n . Or, to say this differently, if you count the words that occur in a text and assign a rank to each word based on the frequency or number of its occurrences – giving rank 1 to the most frequently occurring word, rank 2 to the second most frequent word, etcetera – you will arrive at an inverse proportion of frequency and rank. This is a hyperbolic distribution of the constituents of the text.

George Kingsley Zipf proved this law for spoken and written texts of different authors. It is now understood as the law of 'context generation' during the formation of a text. It means that the context itself defines the occurrence or suppression of words.



Context guarantees coherence and meaningfulness of a message. Context arises from the interaction of the semantics of each word. A long chain of words remains meaningless as long as the collective semantic content is not provided. Zipf's distribution was also found in musical texts and has been defined as a measure for compositional context, proving that music is a natural language of itself.

The discovery of Zipf's distribution in the genome is indicative of the communicative efficiency of DNA and a proof for the existence of a coherent context-imbedded message in it.

Again this is only possible if all of the molecular material has meaning and not just the coding genes. So you are not a graveyard or garbage bin of 98% of outdated material, unless you prefer to go along with the Richard Dawkinses of this world who are satisfied with being regarded as an evolutionary animal.

As a side note, the same Zipf distribution has been shown to exist in close approximation within the distribution of prime number factors in the Fibonacci series. Is there a correlation between DNA and prime numbers? There is, and it is probably the most fascinating and profound of all properties of DNA which will be addressed in our next Solari Future Science report.

Given this similarity or even *coincidence of language and DNA* has made me convinced that the extensive efforts of intelligence agencies such as the NSA to collect all of our conversations, messages, and writings is not so much because they are listening to what we have to say, —



—— but because they are out to capture the underlying Chomskyian deep structure of language itself that has creative power.

Why has Google named itself ‘Alphabet’ if there was not a profound interest in the fundamental properties of language?

The breakthrough of Artificial Intelligence that we witness today is based on the deciphering of language itself. The most important threshold – I believe – was crossed with IBM’s ‘Watson’ computer which for the first time implemented computing processes that come close to human thinking and learning. As you know, in 2011 Watson outperformed the best players at *Jeopardy* and did so based on algorithms of *computational linguistics* and natural languages.

These computers are no longer programmed to retrieve information from a database, but are modern ‘inference engines’ combined with ‘neuromorphic chips’ literally learning like a human brain to combine new statements and ideas, only much faster.

Just a few weeks ago, IBM's new supercomputer, 'Summit', was announced using ‘deep learning’ algorithms or what is called *cognitive computing* combined with a huge memory base that puts AI beyond the reach of human minds. Its latest version called ‘Project Debater’ is able to persuade a human subject to follow its argumentation, even on political issues. These artificial intelligence systems interact with their environment in real time and are able to change strategies along the course. They are learning from trial-and-error using raw data much like a human, a process called ‘reinforcement learning’.



The neuromorphic and cognitive computers are also involved in the ‘Human Brain Project’ or ‘Blue Brain Project’ that has discovered high-dimensional structures in neuronal firing patterns of the brain — a topic that we will have to talk about.

The near future will bring hyper-dimensional geometric networks combined with neuromorphic chips for fractal brain-like supercomputing. The genie is out of the bottle, and there is no turning back. The human brain has been decoded, and metacognition is being deconstructed – all based on the deconstruction and decoding of language. If now combined with the holographic wave-nature of DNA that itself has linguistic properties, we all have to take notice. We have a duty to know!

If there is a real resonance between DNA and human language, it should be possible to *modulate DNA by language alone*. And I'm afraid this has already been done, and the implications are powerful. In a frightening and yet groundbreaking set of experiments the Gariaev group has used human language signals to initiate gene modification and expression.

Curiously, this situation was forecast hundreds of years ago if we read the Kabbalistic literature about the Golem, the construction of an artificial intelligence that also had a genetic body put together by a corrupted form of language. It imitated a human but did not have the higher attributes of a human soul.



Even older are the Gnostic teachings such as the *Pistis Sophia* that describe how archons or off-planetary intelligence are responsible for the industrious production of genetic material that is moulded to resemble Jaldabaoth, the demiurge, his name itself a corruption of the original power of creation in *Yah Sabaoth*.

According to these texts, we have been at this point before, or have always been in the deep mind programming of Oblivion without noticing it. However, now it seems the computerised language system is biting its own tail, closing the circuit, which could lead to a point where we are programming ourselves out of existence – unless we can access a radically different and *higher type of language*, a new formalism of thoughtforms in terms of Gödel's incompleteness theorem, that outmaneuvers the language based AI machine. Such a formalism must be based on a consciousness of *revelation*, and not on human deductive thinking.

PART 4: Experiments to Shift the Paradigm

Let us look at some experiments of different researchers that all give indication of a holographic wave-nature of genetic information.

A warning and apology in advance: Some of the experiments I am going to describe unfortunately involved animals and their implied suffering or unnatural use.

After the observation of the Phantom effect of DNA in the scattering chamber when a live culture was irradiated with laser light, Gariaev —



— and team discovered that the laser could also be used in a reverse setting to transmit genetic information onto a living recipient.

They used a special helium-neon laser of a wavelength of 632 nanometers with internal mirrors and discovered that it probably created a dynamic non-linear hologram where the lightwave is refracted from the cell sample and phase-conjugated with the original light beam multiple times. Such holograms are studied today in connection with metamaterials.

This means that the light is reflected back into the laser now carrying the quantum spin modulation from the diffraction of the bio-sample. The modulations stem from the optical activity and rotational vibrations of the microstructures or liquid crystal domains of the DNA.

As this beam goes back and forth, the information modulation becomes amplified. It also creates a broadband spectrum that involves frequencies from the near-infrared down to the radiowave bandwidth of 640-700 kHz. These radiowaves are picked up by a radio-receiver and captured by the soundcard of a PC to be stored as a digital signal, much like an MP3 file. Thus the broadband laser becomes modulated with the scanned DNA information which can be transmitted over distances.

Here you can see a rather crude video of the basic technical equipment that they used. It's an older machine, the LGN-303 helium neon laser. It produces two orthogonally-polarized beams.



Here the laser beam is switched on and focused onto the biological sample on the tray. You can hear the readout. The light that is reflected back from the biological sample is modulated by the spin information of the atoms, the quantum particles, the scanned DNA.

As this modulation is reinforced, going back and forth between the sample and the laser light source, an electromagnetic radio interference – a hologram – is produced, which is picked up by the sound recorder. That can be stored as a sound file onto a computer and even listened to.

One almost feels pity when seeing the basic type of equipment that they had to contend with. Russian research was never well-funded, especially in those times of the Cold War. Money was always an issue – and still is – and yet I think that it is remarkable that all of this has been built in Russia. They are great achievements: the Tertishny laser, the Denisyuk dynamic hologram, and the DNA holographic recording of Peter Gariaev's work.

Initial experiments were done in Moscow in 2000 and then in Toronto, Canada in 2001 where the genetic laser transmission successfully performed the regeneration of the pancreas of a group of rats that had been poisoned for the experiment.

Here we can see the charts for the animal groups used in the experiment. The rats were injected with alloxan which is a toxin that destroys the pancreatic functions of insulin production and leads to the death of the animal on the third or fourth day.



A DNA modulated laser hologram was created from pancreatic cells of young and healthy specimens of the same genetic line and was radiated to the poisoned and very sick individuals. Without any other treatment, all rats returned to health and continued living while untreated specimens of the control group all died.

The animals were exposed to 30-minutes of modulated laser radiation on 4 subsequent days. The distance of the laser equipment to the animals with alloxan injection was a few centimeters to about four meters. In later experiments the distance was increased, ultimately to 20 kilometers. This means that the genetic change, or ‘genetic engineering’, was possible non-locally and over a vast distance.

Gariaev told me privately how after they made this discovery in Toronto, one morning he came back to the laboratory which was funded by a company whose name he did not divulge, and all of the equipment, including the data, was gone!

This was a shock and he had to return to Moscow where with no or very little funding he rebuilt and repeated the experiments. There they found that holographic information could even be introduced *preventively* to establish immunity to such organ failure, where treated animals would not succumb to the action of alloxan injected later.

Let me show you a short section of a DVD we published from Gariaev’s lecture at the Academy for Future Science in 2012. You will have to listen to two consecutive translations, as the audience was both English and German-speaking.



Gariaev is the blond guy in the middle, the English translator is my colleague, Krishjanis Bruvelis, and yours truly translating into German:

The group of doctors who are working together with me went a step further. They have a precedent of 'wave-induced immunity' which is something completely new, which nobody has seen before. If you introduce the healthy information to the rats in a sufficiently long time, the rats are no longer reacting to alloxan. Even when we introduced this alloxan in quantities five or six times more, it is usually lethal. This is the normal levels of sugar, and it was holding for more than 40 days.

It means that we can shield ourselves from toxins that we produce in our body or that are introduced into our body. So the huge perspective is opening because usually the reason of our death is intoxication. Also we found that our system is capable of reading information from any biologically active substance.

A similar experimental setup allowed Gariaev's team to re-activate damaged seeds from the Chernobyl nuclear disaster by light- and radio-wave irradiation with quantum spin information modulation from healthy seeds of the same plant type.

The idea is that the DNA modulated lasers would provide the original un-damaged genetic information back into the cellular carrier which is able to revive. This is a form of stem cell programming by electromagnetic waves. One of the very fascinating achievements was the transmission of a healthy donor wave of a preparation of glial cells from the cerebral cortex onto what is called 'mesenchymal stem cells' which would then differentiate into neurons.



These were placed into the blood circulation of a patient paralyzed by a spinal cord injury. Repeated injections led to the return of 90% of the patient's motor functions.

With this ability, of selectively protecting or weakening certain immune functions of the organism by radiating DNA holograms onto certain specimens, I wonder if this isn't what DARPA is going to employ in the recently announced 'pre-emptive gene tuning' or PREPARE program that Solari readers will have read about on Dr Joseph Farrell's blog.

DARPA does not explain in detail how the organism would be tuned to better withstand infections or toxins, but they do speak of 'programmable modulation of gene expression' of the vulnerable host organism.

Here is a quote from their press release:

The envisioned PREPARE technologies would provide an alternative that preserves the genetic code exactly as it is and only temporarily modulates gene activity via the epigenome and transcriptome, which are the cellular messages that carry out DNA's genetic instructions inside cells. This would establish the capability to deliver programmable, but transient, gene modulators to confer protection within brief windows of time for meaningful intervention.

It sounds very much like plagiarizing Gariaev's work here...



Based on the experiment described earlier that yielded a phantom DNA waveform in the empty background, Gariaev and team implemented the phantom phenomenon also in the reverse – namely, *materialising* a DNA fragment in water through modulated laser radiation upon the water. They also radiated the radiation spectrum of glucose, which was first read through the special laser installation and then beamed onto the water which triggered a *glucose phantom* in the water, which was physically testable by the color reaction of litmus paper. This is almost miraculous – to induce a chemical reaction from informed light alone.

This is similar to the famous experiments by Luc Montagnier, the French Nobel Laureate who discovered the AIDS virus. His recent work focuses on electromagnetic signals from DNA – work for which he is ridiculed by many of his former admirers.

In these experiments Montagnier recorded electromagnetic signals from a DNA sequence, in this case from bacterial and viral DNA, by a different procedure. The DNA solution was placed into distilled water, which was then filtered with Millipore filters to remove the actual molecular components from the water.

After that, the water underwent several rounds of dilution in steps of times 10, to create potentiations of up to 10^{-12} . The diluted water samples were then exposed to a coil generating extremely low frequencies in the range of 7-8 Hz (the Schuman resonance). No material molecules were present any longer but in Fourier analysis of the water samples the higher dilutions showed frequency spectra that differed from the control or background noise indicating the presence of a signal.



Finally, when the water was put in contact with a Polymerase enzyme for Polymerase Chain Reaction, which is a reliable technique to quickly make copies of a given sequence of DNA, the DNA of the bacteria was rebuilt! Again, there was no material molecule of the original DNA in the container, and the polymerase enzyme built the replica from seemingly nothing. The enzyme must have received the blueprint for the reconstruction of the DNA from the electromagnetic signal visualised in the Fourier analysis.

Montagnier, like Gariaev, recorded the electromagnetic signals on a microphone coil and saved them as an audio file. The file was emailed to another lab in Italy where the audio is emitted onto distilled water for a certain duration, and the treated water is then put into the Polymerase chain reaction. Again the DNA is reproduced.

How is that possible? From a sound file of the radiation spectrum of distilled water with no physical DNA molecule detectable the DNA sequence was replicated!

Montagnier – inexplicably to me – used the DNA of an HIV infected patient for his experiments. Does that mean that we can send active germs through the internet in an MP3 file? Possibly mixed into music files? You decide.

Finally, I want to show you some of the work of Tsian Kanchzhen – probably the most incredible of all.



I would not normally take this seriously if I simply encountered some pictures or a report on the web were it not for the fact that Kanchzhen was referred to by the Institute in Novosibirsk that I worked with, and his work studied and referenced by other Russian scientists.

If Vlail Petrovich Kaznacheev took it seriously enough to organize a conference with 130 scientists from all over Russia who looked at and discussed his work, then it is a real thing. There have also been five documentaries made about him in Russia, and numerous articles were published. There is only one in English, as far as I know, published in *Nexus Magazine* in 1996.

Tsian Kanchzhen was born in 1933 in China where he studied medicine and went into the medical profession, but he also studied electronics as well as cybernetics, which equipped him with a knowledge of physics and electromagnetic radiation.

Early on, he had very advanced ideas about the field nature of life, and he studied the ultraviolet light emissions from cells. Being trained as a radio technician and in cybernetics, he realized that an electromagnetic field would also be emitted from the brain. So he began studies on the enhancement of brain abilities and mental abilities under the influence of electromagnetic radiation.

Naturally this roused the interest of the science officials of the Central Committee of the Communist Party of China when he was able to increase the accuracy of Zener card predictions by test persons in experiments – which are telepathy experiments where the experimenter would predict which card the other operator had drawn.



The work was ultimately classified, and also in the 1960's the revolution started to change the whole climate in China where Tsian Kanchzhen was not a party liner.

After great difficulty, also being caught in an attempt to leave the country and being incarcerated for four years in a very small confinement which impacted on his moving ability and health, he ultimately made his escape to Russia and began a new career there even though his degree in medicine was not recognized there.

Already in China he had developed an installation called the 'Biotron' which he rebuilt in Russia when he settled in Khabarovsk City.

Through his work he came to the conclusion that DNA, as the physical molecule, is just something like a tape recorder of an actual electromagnetic biological information field or signal. So he sees two forms of the DNA: One is the passive molecular structure that is the physical carrier and provides the stability of the genetic material, while the other is the electromagnetic field of the information riding upon this carrier.

While the molecule is extremely stable, it is possible to change and modulate the electromagnetic signal that is carried upon it. The Biotron works with *microwave frequencies* to read information from the DNA or the field of the living organism, directing it to another living organism. If the transfer process goes on for a period of time, certain genetic changes are taking place in the receptor organism.



The first experiment was carried out around 1961 where he placed a duck into the donor or transmitter side of the installation and placed the eggs of hens into the receiver side of the installation. After a period of this treatment of microwave radiation, the hen eggs were allowed to develop. The resulting chicken had features of a duck. They were altogether larger, they had a flatter beak, and they had membranes of skin between their digits – the webbing that ducks have. The second generation chickens from such treated animals retained the genetic changes.

I know that these experiments are quite shocking. Even more shocking is the realization that they are possible.

There were other animal chimera experiments that I do not want to mention. He also did experiments on vegetables and fruits or plants. For example, he crossed a cucumber with a watermelon. It produced a testable increase in the sugar levels in the cucumber plant. Again, these genetic changes were hereditary in the following generations. The crossing of wheat and corn or maize produced a complete change of the maize cob and an increase in yield.

Remarkable experiments were also carried out in the area of rejuvenation of an organism, focusing the bio-electromagnetic *field of young organisms* onto old ones. The first experiments were carried out on elderly mice that increased their lifespan, their mobility, their reaction capacity, and appetite as well as sexual functions and reproductive capacity. Even old mice were able to reproduce again.



Some of the rejuvenation experiments were also done on human volunteers, radiating fresh, young plant sprouts and germlings onto human receptors.

Please note the very interesting geometry of the installation. That is the original installation, and you can also see the cables – the wave guides – into the installation that are connected to each of the vertex points of the geometry. It's a dodecahedron geometry, and it makes me wonder if there are certain architecture types and certain buildings and spaces that would facilitate transmission of electromagnetic wave information.

We should also consider that microwaves that are used here are not naturally occurring on earth. Microwaves that would arrive from cosmic spaces are naturally shielded from the biosphere of earth through the magnetic field. The fact that we are nowadays swimming in a ubiquitous bath of microwaves is quite disconcerting, especially in connection with the research of Tsian Kanchzhen.

This has become a long report, but I wanted it to be somewhat comprehensive. I hope what has become clear from the materials presented is that we all have to change our view of what DNA and ultimately what life is. High-level and classified science has already made that step. DNA can quite literally be regarded as a new form of internet, and these understandings are being applied, for example, through meta-materials that are used in holography – three-dimensional holography or in mechanobiology in terms of the *DNA as an antenna system* that will ultimately allow biological quantum computers.



Other future applications will be new holographic video formats or technologies that are coding both the acoustic as well as in the electromagnetic domain, and I can see also three-dimensional holographic books – even interactive books – as we remember that DNA can be 'spoken to'.

Perhaps we can now also solve some of the issues between Creationism and evolutionary theory or Darwinism. Were we created, or did we evolve? Perhaps it is both.

While the chemical structure of the DNA molecule will be almost the same in virtually all organisms, the electromagnetic information and signal – or holographic image – that travels upon this molecule can be vastly different. And it's the extraordinary power and survivability of that holographic image that we should trace back to a divine mind.



MODIFICATION

Transcripts are not always verbatim. Modifications are sometimes made to improve clarity, usefulness and readability, while staying true to the original intent.

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