

# Radioactivity effects and the formation of water and other matter within the Earth

## Introduction

There are many scientific versions of how the Earth developed its water and other matter like minerals, precious metals, and gemstones. The purpose of this essay is to discuss a range of ideas about processes within and on the Earth that form water, minerals, and life to explain the delicate balance between the environment and sustainable life. Radioactivity created by humans is now an unnatural and harmful threat to the health of all life on Earth.

Scientists often describe exoplanets that are potential promising candidates for life, as *habitable zones*. This is a description of planets in orbit where temperatures, as predicted by the distance from the host star, are not too cold for liquid water to exist on a planetary surface, and also not too hot for all the water to burn off. This planetary sweet spot, which not surprisingly Earth inhabits, is also more casually called the *Goldilocks zone* for exoplanets. While there is certainly value to the habitable zone concept, there has also been scientific pushback to using the **potential presence of liquid water as a primary or singular factor in predicting potential habitability**.

For example, there is now ample evidence that planets and moons in our sun's universe have or have had water (eg. liquid, ice, and vapour). Our Earth moon has been recently described as having water (in an ice form). There are two primary questions that arise from this fact:

- Do all planets and moons within our solar system have an inherent capacity to make water? and
- Does the presence of water on a planet or moon lead to life (as we know it, including microbes)?

With these issues in the background, an interdisciplinary team of astrophysicists and planetary scientists at the University of California, Santa Cruz have looked at a source of heat in addition to suns and tidal forces that might play a role in making a planet habitable. This source is the heat generated by the decay of long-lived radioactive (gamma-ray) elements such as **uranium, thorium, and potassium**, which are found in stars and on and in planets throughout the galaxies in greater or lesser amounts. Scientific theory and modelling have concluded that the abundance of these radioactive elements in a planetary mantle can indeed give important insights into whether life might emerge on a planet.

The theory of radioactivity forming minerals and water in the Earth is not new. Walter Russell in his book (*Atomic Suicide*, 1957, 1981) describes a process whereby water is created from radioactivity (decay that produces heat). He says: *animal and vegetable life are dependent upon*

*the upper few feet of the earth's crust to live. The soil must have humus, nitrogen, carbonic gas, oxygen, and water. **These so-called deadly radioactive poisons are preparing the soil for oxygen-dependent life to live by causing countless billions of microscopic explosions in the rock formations underground to release water and other necessities for human life and vegetation.** That is, radioactive elements in their **proper place in Nature**, are **fulfilling their necessary useful purposes**. They are vitally necessary where they are. They are of benefit to man when underground or distributed in rocks. It is only when we dig them out from under the ground and condense tons of harmless rock to ounces of deadly free metal, such as uranium piles, that we make the earth uninhabitable for man.* It is important here is say, that Russell was warning in his book against the extraction of radioactive elements (eg. uranium) from the Earth for the production of nuclear energy and nuclear bombs, due to the adverse effects on all life on Earth. Humans do use radiation (heat from wood, etc.) for warmth, however radioactivity is a different source of heat that will decay cells. **Russell's theories** are further discussed later in this essay.

## Radioactivity as an essential heat source in the Earth

Radiogenic heat involves how very heavy elements are formed in the galaxies, and the implications of how and where they are forged. Early explanations of how uranium, thorium, etc. were formed focused on supernovae, the explosive brightening of a star in which the energy radiated by it increases by a factor of ten billion. A supernova explosion occurs when a star has burned up all its available nuclear fuel and the core collapses catastrophically. It is well established that key elements such as carbon and sulphur are produced in those massive explosions, and heavy radioactive elements are theorised to be formed in that cauldron as well.

The radiogenic heat (produced through radioactive decay) makes the Earth warm enough for life. However, internal radiogenic heating may well be necessary for the planet to create an internal dynamo that can start the Earth expansion process (see [Earth expansion: main scientific evidence that the Earth is expanding \(dinox.org\)](#)) and generate a magnetic field.

Earth possesses a strong magnetic field that originated from the Earth's fluid outer core (the intrinsic field). This field accounts for more than 95% of the magnetic energy of the observed geomagnetic field at the Earth's surface. Its temporal and spatial variations hold some of the key knowledge of Earth's deep interior properties, of interactions and responses between the fluid core and the solid Earth, and the Earth system evolution history. Magnetic fields such as the one surrounding the Earth can protect planets from solar winds and cosmic rays, while Earth **expansion joints** provide a means of modulating the heat of the planet and releasing elements needed to create an atmosphere.

Different planets accumulate different amounts of these radioactive elements that ultimately power geological activity and the magnetic field. However, if the radiogenic heating is significantly greater than on Earth, then the planet cannot permanently sustain a dynamic state, as Earth has done. This is because most of the thorium and uranium end up in the mantle

and too much heat in the mantle acts as an insulator, preventing the molten core from losing heat fast enough to generate the convective motions that produce the magnetic field. When there is more radiogenic internal heating the planet has much more volcanic activity, which could produce frequent mass extinction events. On the other hand, too little radioactive heat results in no volcanism and a geologically *dead* planet.

The dynamo theory describes the process through which a rotating, convecting (rising and falling based on temperature,) and electrically conducting fluid, acts to maintain a magnetic field. This theory is used to explain the presence of anomalously long-lived magnetic fields on planets, moons, and other bodies. The convective flow in the Earth's fluid outer core (geodynamo) is probably liquid iron, and 3,000 km below the surface.

It has long been speculated that **internal heating drives expansion joint activity**, which creates carbon cycling and geological activity like volcanism, produces an atmosphere. The ability to retain an atmosphere is related to the magnetic field, which is also driven by internal heating.

While all rocky planets are formed with vast primordial heat inside, that heat gradually diminishes. Therefore, the geological and electro-magnetic future of planets, or some planets, become increasingly determined by the presence, or absence, of heat-producing radioactive elements. Some radioactive isotopes that play important roles are relatively short-lived, such as aluminum and magnesium which decay over millions of years. Then there's uranium, thorium, and potassium that decay (and give off heat) over billions of years. While all these radioactive elements and their compounds are found on the earth's surface or crust, the most important concentrations are scattered through the much larger mantle and beneath it where the planet-molding activity takes place.

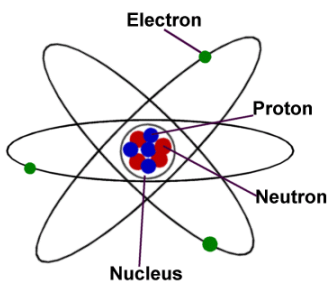
This hypothesis that habitability is related to radiogenic heating can also apply to rocky planets substantially larger than Earth. Another aspect of the radiogenic heat story involves how those very heavy elements are formed in the galaxies, and the implications of how and where they are forged. Early explanations of how uranium, thorium, etc. were formed focused on supernovae, the explosive brightening of a star in which the energy radiated by it increases by a factor of ten billion. A supernova explosion occurs when a star has burned up all its available nuclear fuel and the core collapses catastrophically. It is well established that key elements such as carbon and sulphur are produced in those massive explosions, and heavy radioactive elements were theorised to be formed in that cauldron as well.

Recently, scientists have focused on the mergers, or collisions, of neutron stars as the source. In the aftermath of the 2017 detection of a neutron star collision (and creation of a subsequent gravitation wave), the neutron star origins of very heavy elements became more widely embraced. That is because the collision was found to produce jets of radiation and of heavy elements. Neutron stars are the collapsed cores of massive super-giant stars and have radii in the order of 10 miles but with a mass greater than that of our sun. They are so dense that a matchbox containing neutron-star material would have a weight of approximately 3 billion tons. Europium is created by the same process that makes thorium and uranium, therefore

using europium as a tracer, it is possible to study the variability of those elements in our galaxy's stars and planets.

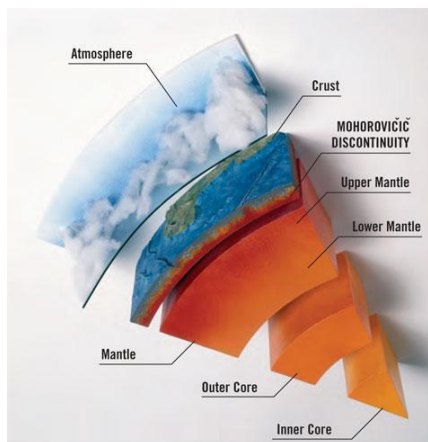
In summary, the universe is dynamic where matter is formed from energy and processes of transmutation are ongoing to form water, and the elements that make up the metals, gases, etc. This **radioactive transmutation** process within the Earth, likely involves nuclear fusion or fission that releases vast amounts of energy (heat). However, on the Earth the process of **biological transmutations** occurs without the intense energy of nuclear fusion or fission.

## Radioactive transmutation



The process called transmutation, is the **change of one element into another as a result of changes within the nucleus**. The radioactive decay and transmutation process will continue until a new element is formed that has a stable nucleus and is not radioactive. Transmutation can occur naturally or by artificial means.

Most natural transmutation on the Earth today is mediated by the radioactive decay of radioactive primordial nuclides left over from the initial formation of the solar system (such as potassium-40, uranium, and thorium), plus the radioactive decay of products of these nuclides (radium, radon, polonium, etc.). Radioactive transmutation within the *Mohorovicic Discontinuity* zone of the Earth (ie. the Moho zone between the Earth's Core and the Mantle (see image below) is the genesis of mineral and water evolution within the Earth.



*For example, every crystal (eg. a diamond) has a seed, and in this case, carbon is the seed. The source of the carbon that becomes a diamond, is carbon that was trapped deep in the upper mantle or lower crust during the formation of the planet. Fluids flowing through the mantle become pressurised and gain momentum while moving, and eventually erupt, pushing past this trapped carbon and forging it into diamond as the magma makes its way towards the surface. The inner core is likely liquid or gas or both.*

It is this radioactive transmutation process within the Earth that enabled life on Earth. It was the movement of the minerals and water to the Earth's surface that provided the *seeds* for life, along with the formation of the atmospheric and sunlight conditions through this atmosphere.

The pathways for water and minerals to the Earth's surface was through volcanoes, expansion joints in the ocean and on the land (eg. rift or a linear zone where the lithosphere is being pulled a part), geysers, freshwater plumes (hydrothermal vents) at the bottom of the ocean, springs from rock fracture systems, earthquakes, etc. Also, there are rock intrusions and areas of subduction that cycle minerals and water, including seawater.

There is no *standard model* on how life started. The most accepted models are built on molecular biology and cell biology. However, the question that has not been answered by science is what conditions and components of Earth (eg. water, minerals, compounds, gases, light, and other universal energies that facilitate the *geometry of life*, etc.) enabled the first biological cell. The current model of thinking goes something like this:

Once the desired conditions on the surface of the Earth were formed, then some basic small molecules evolved. These are called the monomers of life and included amino acids as one type of these molecules. This was proved by the Miller–Urey experiment by Stanley L. Miller and Harold C. Urey in 1953, and we now assume these **basic building blocks are common throughout space**. Early Earth would have had all of these components.

- Phospholipids, which can form lipid bilayers, a main component of the cell membrane.
- Nucleotides which might join up into random RNA molecules. This might have resulted in self-replicating ribozymes (**RNA world hypothesis**).
- Competition for substrates would select mini proteins into enzymes. The ribosome is critical to protein synthesis in present-day cells, but there is no idea as to how it evolved.
- Early on, ribonucleic acids would have been catalysts, but later, nucleic acids are specialised for genomic use.

The origin of the basic biomolecules, while not settled. The basic chemicals from which life is thought to have formed are:

- Methane (CH<sub>4</sub>),
- Ammonia (NH<sub>3</sub>),
- Water (H<sub>2</sub>O),
- Hydrogen sulfide (H<sub>2</sub>S),
- Carbon dioxide (CO<sub>2</sub>) or carbon monoxide (CO), and
- Phosphate (PO<sub>4</sub><sup>3-</sup>).

Molecular oxygen (O<sub>2</sub>) and ozone (O<sub>3</sub>) were either rare or absent. The 3 basic stages are:

- Stage 1: The origin of biological monomers
- Stage 2: The origin of biological polymers
- Stage 3: The evolution from molecules to cells

## Earliest claimed life on Earth

The earliest claimed lifeforms are fossilised microorganisms (or microfossils). They were found in iron and silica-rich rocks which were once hydrothermal vents in the Nuvvuagittuq greenstone Quebec, Canada. These rocks are as old as 4.28 billion years. If this is the oldest record of life on Earth, it suggests *an almost instantaneous emergence of life* after oceans formed 4.4 billion years ago. According to Stephen Blair Hedges, *if life arose relatively quickly on Earth, then it could be common in the universe.*

### Previous earliest

A scientific study from 2002 showed that geological formations of stromatolites 3.45 billion years old contain fossilised cyanobacteria. At the time it was widely agreed that stromatolites were the oldest known lifeforms on Earth which had left a record of its existence. Therefore, if life originated on Earth, this happened sometime between 4.4 billion years ago, when water vapour first liquefied, and 3.5 billion years ago.

The earliest evidence of life comes from the Isua super-crustal belt in Western Greenland, and from similar formations in the nearby Akilia Islands. This is because a high level of the lighter isotope of carbon is found there. Living things take up lighter isotopes because this takes less energy. Carbon entering into rock formations has a concentration of elemental  $\delta^{13}\text{C}$  of about  $-5.5$  of C, biomass has a  $\delta\text{C}$  of between  $-20$  and  $-30$ . These isotopic fingerprints are preserved in the rocks. With this evidence, Mojzsis suggested that life existed on the planet already by 3.85 billion years ago.

A few scientists think life might have been carried from planet to planet by the transport of spores. This idea, now known as **panspermia**, was first put forward by Arrhenius.

### Spontaneous generation

Until the early 19th century many people believed in the regular **spontaneous generation of life from non-living matter**. This was called spontaneous generation, and was countered by Louis Pasteur. He showed that without spores no bacteria or viruses grew on sterile material. However, it should not be assumed that Pasteur had created the same conditions that enabled life to form on Earth, and this occurrence of a cell (matter) could have been a spontaneous generation from a combination of energy forms. While spontaneous generation is no longer considered a serious theory in classical science belief systems, it is a highly probable theory for the presence of life.

### Darwin

In a letter to Joseph Dalton Hooker on 11 February 1871, Charles Darwin proposed a *natural process* for the origin of life. He suggested that the original spark of life may have begun in a

*warm little pond, with all sorts of ammonia and phosphoric salts, lights, heat, electricity, etc. A protein compound was then chemically formed ready to undergo still more complex changes. He went on to explain that at the present day such matter would be instantly devoured or absorbed, which would not have been the case before living creatures were formed.*

This theory sounds very much like spontaneous generation from a unique set of energy and material conditions.

## Haldane and Oparin

No real progress was made until 1924 when Alexander Oparin reasoned that atmospheric oxygen prevented the synthesis of the organic molecules. Organic molecules are the necessary building blocks for the evolution of life. In his *The Origin of Life*, Oparin argued that a *primordial soup* of organic molecules could be created in an oxygen-less atmosphere through the action of sunlight. These would combine in ever-more complex fashions until they formed droplets. These droplets would grow by fusion with other droplets, and *reproduce* through fission into daughter droplets, and so have a primitive metabolism in which those factors which promote *cell integrity* survive, those that do not become extinct. Many modern theories of the origin of life still take Oparin's ideas as a starting point.

Around the same time J.B.S. Haldane also suggested that the Earth's pre-biotic oceans, which were vastly different from what oceans are now, would have formed a *hot dilute soup*. In this soup, organic compounds, the building blocks of life, could have formed. This idea was called *biopoiesis*, the process of living matter evolving from self-replicating but nonliving molecules.

## Biological transmutations

This section of the essay outlines a range of people who undertook experiments that demonstrated the validity of biological transmutations.

The discovery of Cold Fusion in 1989 by Stan Pons and Martin Fleischmann triggered new attention in the field of biological transmutations. Even though experiments have shown that transmutations of elements occur in living cells, this field has been totally ignored by the scientific community. The situation is not different now, but recently new experiments, in particular, by Vysotskii and Kornilova, brought new results using modern analytical techniques. It is interesting to recall the situation of chemistry before Lavoisier, which was the time of alchemy, when the modern scientific method had not yet been developed. Also, the nature of the elements had not been clearly identified. Most of the works come directly from Herzelee's experiments. They triggered the experiments made by Baranger, Kervran, Goldfein, Holleman and then Vysotskii. Many experimental results described in this paper have been performed in the 19th century or in the early 20th century, and the full data are not easily available.

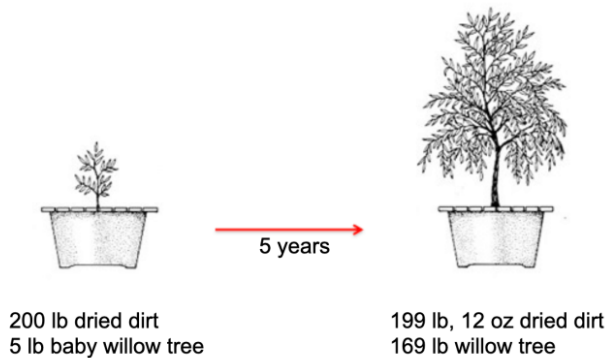
However, if we consider the totality of these data, including the most modern ones, there is compelling evidence that biological transmutations are a real scientific fact.

For example, Hydrogen Production by Photosynthetic bacteria has long been studied for their capacity to produce significant amounts of H<sub>2</sub>. Photosynthetic bacteria evolve molecular H<sub>2</sub> catalysed by nitrogenase under nitrogen-deficient conditions using light energy and reduced compounds. The overall reaction of hydrogen production is given as:



### Jan Baptist von Helmont

From the time of Aristotle (~300 BC), the conventional wisdom was that *plants are soil-eaters*, in other words, the mass of the tree comes from *humus* of the soil. People at that time must have seen that plants can grow outside of soil as well. For example, free-floating aquatic-plants like *ducks meate* (*Lemna* spp.) or *frogge-bit* (*hydrocharis morsus-ranae*) were omnipresent in Europe. Also, gardeners do not have to add soil to the plants regularly, but watering is essential. However, no one objected to the idea that plants grow eating our garden soil! This *soil-eating* theory remained unchallenged for centuries until in the 1640s a Flemish scientist named Jan Baptista van Helmont did a brilliant experiment. It was so simple yet powerful to uproot a century-old concept.



***One of the ways to demonstrate it by growing a plant in a pot, essentially isolating its soil system. Exactly what was done in the 1640s, in Helmont's garden. Helmont took 200 pounds of dried soil. Then he put the soil in an earthen pot and moistened it with rain or distilled water. A willow tree weighing 5 pounds was planted in that pot.***

The tree continued to grow happily for a few years in Helmont's garden with regular watering. For watering purpose, Helmont used rainwater due to its relative purity and absence of dust particles. After 5 years being finished, he uprooted the tree and weighed again. It was 169 pound and three ounces. The soil was dried in a furnace and weighed thereafter. Not surprisingly, it was almost 200 pounds which was the initial weight of the earth. From this experiment, he concluded that the tree did not grow from the soil but *164 pounds of wood, barks, and roots, arose from water only.*



Helmont's experiment dispelled the 'soil-eating' theory. However, his conclusion was not entirely true. As we know today, although plants do not eat soil entirely, the essential nutrition or minerals come from it. Also, he completely missed that plants not only need water for growing but also need carbon dioxide. He concluded that the mass of the tree came from the water but never weighed the total amount of water used. Despite all these flaws in his conclusion, Helmont was still definitely ahead of his time. His emphasis on analysis by weighing the materials is basically the law of conservation of matter in chemistry, which says that in a chemical reaction the reactants and products should have the same mass. This was formulated by Antoine Lavoisier in 1774, ~ 100 years after the Helmont's experiment.

#### Louis Nicola Vauquelin (1763-1829)

Louis-Nicolas Vauquelin was a French pharmacist and chemist, and was the discoverer of beryllium and chromium periodic table elements. Vauquelin also isolated camphoric acid, quinic acid. He isolated asparagine amino acid from asparagus plant, along with pectin and malic acid in apples.

He also discovered that chickens could produce more **calcium** in their eggshells than entered their bodies. Therefore, they had to be able to transmutate the **calcium**, otherwise their own bodies would have been completely depleted of calcium.

#### Albrecht Thaer 1752-1828)

Albrecht Thaer observed that organic reactions are attributed to a *life force energy*. Thaer showed that under some circumstances, calcium transforms into **silicon**. According to him, **silicon** could transmute from potassium.

In biodynamic agriculture, **potassium** can be formed from **transmuted** calcium (in combination with hydrogen), and so on. The very idea of *soil analysis* is called into question, when dealing with the biologically active soils found on Biodynamic and organic farms and gardens. Where soil life (microbe diversity and other soil life that make up the soil ecology) is abundant, there are many *active cycles* occurring.

#### William Prout (1785–1850)

In 1822, the English physiologist, Prout studied chicken eggs in incubation. He found that hatched chicks had more lime (calcium) in their bodies than originally present in the egg, and it was not contributed from the shell.

#### Wilhelm Augustus Lampadius (1772–1842)

In 1832, Lampadius thought that plants themselves create silicon in plants.

## Vogel

In 1844, a German researcher named Vogel planted watercress seeds (*Lepidium sativum*) in a bell jar in crushed glass within a controlled air environment. The seeds were fed nothing but distilled water, yet when grown they contained more sulphur than had been in the seeds originally. Vogel's reasoned that the sulphur was not introduced from sources unknown and was created in the jar.

## Choubard

In 1831, Choubard germinated watercress seeds in clean glass vessels and showed that the sprouts contained minerals, which did not previously exist in the seeds.

John Bennet Lawes (1814–1900) and Joseph Henry Gilbert (1817–1901)

In 1856–1873, two British researchers, Lawes and Gilbert observed an inexplicable variation in the amount of magnesium in the ashes of plants. They could *extract* more elements from the soil than the soil actually contained in the first place, in particular the formation of magnesium in grass.

## Albrecht Von Herzelee (1821–?)

In 1876 Herzelee, a German pharmacist published a series of books in which he showed research proving that plants continuously create material elements. From 1875 to 1883, in Berlin, he conducted 500 analyses with different types of seeds. He worked with clover, crimson, vetch, rapeseed, barley, watercress, bean, white beans, kidney beans, turnips, rye, peas lupine, coltsfoot, and angelica. A typical experiment showed the variation of calcium, potassium, and phosphorus in *Vicia sativa* during germination with or without addition of mineral salts in distilled water. Also, he showed that the addition of various calcium salts to the medium increased the formation of potassium. The addition of  $K_2CO_3$ , increased the formation of calcium.

He concluded that *plants are capable of affecting the transmutation of elements*. His publications outraged so much the scientific community of the time that they were removed from libraries. His writings were lost for more than 50 years until about 1930 when a collection was found by accident in Berlin by Dr. Hauschka, who subsequently published Von Herzelee's findings (*the philosopher W.H. Preuss had dedicated an article to him; Preuss defended the idea that inorganic nature was a product of the organic; Herzelee agreed apparently inspired by Goethe*).

## Freudler

Freudler was a Professor at the famous French University, La Sorbonne. In 1928, he published a book based on his 10 years of research on the production of iodine by algae. He noticed a

connection between tin and granite in which the algae produced and iodine in the plants. It is now known that when cells have limited or no access to iodine, cells use tin as a replacement for iodine. Perhaps tin is transmuted into iodine.

### Earle Augustus Spessard

In 1940, Spessard performed an experiment in which an organic process was studied in a hermetically sealed container. The bottles were weighed after some years. At the end, living protozoa were still seen through the glass walls. Presumably, plant assimilation and animal respiration followed each other more or less in balance. There was a weight *increase* of a few tenths of a milligram (with a balance accuracy of 0.02 mg). Sources of errors, so far as they were known, were carefully eliminated. The predicted continuation of this work did not appear. The increase in weight that was found was far too big to be considered as a *materialisation* of the received light rays.

### Rudolph Steiner (1861–1925)

Rudolph Steiner [18] in 1924 gave a series of lectures giving indications for the development of a new approach to agriculture that later became known as biodynamics. In the 5th series of his lectures, he referred to composting and stated, *even according to the purely external standards of analytical chemistry, this ought to betray the fact that there is a kinship between the way in which oxygen and nitrogen are connected in the air and that in which lime and hydrogen are connected in organic processes. Under the influence of hydrogen, lime and potash are constantly being changed into nitrogenous matter, and finally into actual nitrogen. And the nitrogen, which has come into being in this way, has a tremendous value for plant growth. Silicic acid, as we know, contains silicon and this in turn undergoes transmutation in the living organism. It is changed into a substance which is of exceptional importance, but which is not reckoned by present-day science to be among the elements.*

### Henri Spindler

In 1946–1947, the French Scientist and Director of the Laboratoire Maritime de Dinard, Spindler discovered Herzelee's work on the decrease of phosphorus and increase of calcium. In 1959, he measured an increase of iodine by 30% in algae, *Laminaria flexicaulis* and 80–100% in *Laminaria sacharina*.

### Rudolf Hauschka (1891–1969)

An Austrian chemist, Hauschka during the years 1934–1940, in sealed glass containers, weighed cress seeds, and found an increase in weight of 0.54% during the full moon, and a decrease of 0.58% during the new moon. He published several books in which he re-evaluated Herzelee's work, which he included as appendix in his books, *Substanzlehre* (though it has not been included in the English translation, *The Nature of Substances*).

## Perrault

French scientist Perrault, from the Paris University, found that the hormone aldosterone provoked a transmutation of Na to K, which could be fatal to a patient.

## Julien

Julien was a French Scientist, from the Besançon University. In 1959, he proved that if Tench fish are put in water containing 14% NaCl, their production of KCl increased by 36% within 4 hours.

## George Oshawa (1893–1966)

Oshawa was a Japanese scientist, and an inventor of macrobiotics. He collaborated with Louis Kervran. His opinion was that transmutation occurs during mastication.

## Pierre Baranger (1900–1970)

Pierre Baranger was a French Scientist, a professor of organic chemistry at the famous Ecole Polytechnique, and head of the Laboratory of Chemical Biology. He became intrigued with Herzelee's experiments, but he thought that the number of trials had been too limited and the precautions against error were insufficient. Baranger decided to repeat the experiments with all possible precautions and a large number of cases, which would allow a statistical study. His research project from 1950 to 1970 involved thousands of analyses. Baranger verified the content of phosphorus, potassium, calcium, and iron of vetch seeds before and after germination in twice-distilled water to which pure calcium chloride was not added. Hundreds of samples of 7–10 g each were selected, weighed to 1/100th milligram, and graded, then germinated in a controlled environment.

Baranger found an increase of 4.2% in calcium, and 8.3% of iron, and subsequently a decrease in phosphorus of 1.9%, and of potassium of 1.1%. Interestingly, an addition of  $\text{MnCl}_2$  increases the amount of iron produced. None of the specialists who examined Baranger's work were able to find any experimental errors. Baranger concluded: *these results, obtained by taking all possible precautions, confirm the general conclusions proposed by Von Herzelee and lead one to think that under certain conditions the plants are capable of forming elements, which did not exist before in the external environment.*

In May 1959, he submitted an article for publication in the French Academy of Sciences but was not accepted. Later in 1972, his family tried another submission without success. He had difficulties in publishing his findings and died without being able to do so. Later, in 1977, his family asked Jean Marie Gatheron, a close friend of Baranger to publish Baranger's work. In 1976, his family submitted the final report of Baranger to the Academic Commission of the French Academy of Agriculture. It was decided that the work would be presented to the full

assembly in a secret meeting. The proposal of publication in a public meeting was rejected without any reason. Baranger failed to provide relevant theory to explain his findings.

#### Leendert Willem Jacob Holleman (1906–1994)

From 1975 to 1989 Holleman, a Deutch scientist, performed experiments with alga Chlorella. He observed a decrease, then subsequent increase, of potassium. However, in spite of several attempts, he could not reproduce his own first positive experiments.

#### Correntin Louis Kervran (1901–1983)

Kervran is certainly the most well-known scientist having worked in the field of biological transmutations. He had a broad knowledge of plants, geology, and nuclear science. His findings have been published in French in ten books, some of them have been translated into English. He was also nominated for the Nobel Prize.

From 1935 Kervran collected facts and performed experiments, which showed that transmutations of chemical elements do indeed occur in living organisms. It started when he investigated fatal accidents from carbon monoxide poisoning when none was detectable in the air. He next analysed why Sahara oilfield workers excreted a daily average of 320 mg more calcium than they ingested without decalcification occurring.

Kervran pointed out that the ground in Brittany contained no calcium; however, every day a hen would lay a perfectly normal egg, with a perfectly normal shell containing calcium. The hens eagerly pecked mica from the soil, and mica contains potassium. It appears that the hens may transmute some of the potassium into calcium.

From 1960 to 1980, Kervran reported the astounding results of his research showing that living plants were able to accomplish limited transmutation of elements. Then Kervran was the Conferences Director of the University of Paris, and his first paper was published in La Revue Générale Des Sciences, July 1960.

Kervran found that in nuclido-biological reactions, oxygen is always in the form of O, never O<sub>2</sub>; reactions with nitrogen occur only with N<sub>2</sub>, insofar as is known. The following reactions have been proposed:

$\text{Na}^{23} + \text{H}^1 \rightarrow \text{Mg}^{24}$	$\text{Na}^{23} + \text{O}^{16} \rightarrow \text{K}^{39}$	$\text{Na}^{23} - \text{O}^{16} \rightarrow \text{Li}^7$
$\text{Na}^{23} \rightarrow \text{Li}^7 + \text{O}^{16}$	$\text{K}^{39} + \text{H}^1 \rightarrow \text{Ca}^{40}$	$\text{Mg}^{24} + \text{Li}^7 \rightarrow \text{P}^{31}$
$\text{Mg}^{24} + \text{O}^{16} \rightarrow \text{Ca}^{40}$	$\text{F}^{19} + \text{O}^{16} \rightarrow \text{Cl}^{35}$	$\text{C}^{12} + \text{Li}^7 \rightarrow \text{F}^{19}$
$\text{Cl}^{35} \rightarrow \text{C}^{12} + \text{Na}^{23}$	$\text{Fe}^{56} - \text{H}^1 \rightarrow \text{Mn}^{55}$	$2\text{O}^{16} - \text{H}^1 \rightarrow \text{P}^{31}$
$\text{O}^{16} + \text{O}^{16} \rightarrow \text{S}^{32}$	$2 \text{N}^{14} \rightarrow \text{C}^{12} + \text{O}^{16}$	$\text{N}^{14} + \text{Mg}^{12} \rightarrow \text{K}^{19}$
$\text{Si}^{28} + \text{C}^{12} \rightarrow \text{Ca}^{40}$	$\text{Si}^{28} + \text{C}^{12} \rightarrow \text{Ca}^{40}$	$\text{P}^{31} + \text{H}^1 \rightarrow \text{S}^{32}$

In 1980, Kevran performed an experiment with oat seeds analysed using mass spectroscopy. They looked at phosphorus and calcium variations. They observed the following:

	Phosphorus (mg)	Calcium (mg)
Seeds	485	76
Plants	310	115.5
Difference (mg)	-175	+39.5

It is clear that the calcium increased with germination, whereas phosphorus decreased. There are certainly other elements that played a role, but they were not analysed in this experiment.

In 1971, the laboratory of the French Society of Agriculture sprouted rye seeds under controlled conditions.

	Seeds	Sprout	Difference (%)	Difference (%)
Mg (mg)	13.34	3.20	-10.14	-335
K (mg)	7.36	16.67	+9.31	+133

These results are in good agreement with Kervran's previous findings.

Kervran was active in promoting his work through books, conferences, and mass medias. However, the Academy of Agriculture strongly opposed his efforts. On October 7, 1970, Stéphane Henin on one side and Léon Guéguen and Allez on the other side sent reports to the Academy by criticizing Kervran's results.

### J.E. Zündel

Zündel was a Swiss scientist, head of a paper company, and a chemical engineer at the Polytechnic School of Zurich (ETH Zurich) in Switzerland. Following Kervran's observations from 1970, he studied germinating seeds and observed a 54–616% increase of calcium. In another experiment, he grew 150 oats seeds (flämingkrone) in a controlled environment for 6 weeks. 1243 sprouts were analysed using atomic absorption spectroscopy for the presence of magnesium and calcium. The potassium decreased by 0.033%, the calcium increased by 0.032%, and magnesium decreased by 0.007%. The variation of magnesium was not significant, but the decrease in potassium balanced the increase of calcium. In 1972 with oat seeds, he observed an increase of calcium of 118%, a decrease of magnesium of 23%, and potassium 29%.

In 1971, he gave a lecture at the French Academy of Agriculture (Bull No. 4, 1972). In his lecture, he announced the following variations between seeds and sprouts:

	SiO <sub>2</sub> (mg)	Ca (mg)	Mg (mg)	K (mg)
Seeds	111	28	27	108
Sprouts	123	116	27	70
%	+10	+314	0	-35

In spite of the excellent quality of his works, the audience criticised him, including S. Henin, the head of the Department of Agronomy.

Later in 1979, Zündel, using a mass spectrometer at the Microanalysis Laboratory of the French National Scientific Research Center, and neutron activation analysis at the Swiss Institute for Nuclear Research in Villigen (Aargau), confirmed the increase of calcium by 61%. There was also an increase of 29% in phosphorus and 36% in sulphur).

However, the French Atomic Energy Commission has analysed Zündel's experiments in 1975 by neutron activation analysis of oat seeds. They found no change in calcium, sodium, and manganese, but only a small decrease of potassium, also no isotopic variation in  $\text{Ca}^{48}$  and  $\text{K}^{41}$ .

### Hisatoki Komaki

Following Kervran's work in 1970–1980, Komaki from the Biological and Agricultural Research Institute studied the development of bacteria, mould and yeast. Among those: *Aspergillus niger*, *Penicillium chrysogenum*, *Rhizopus nigricans*, *Mucor rouxii*, *Saccharomyces cerevisiae*, *Torulopsis utilis*, *Saccharomyces ellipsoideus* and *Hansenula anomala*.

Komaki reported that eight strains of microorganisms grown in potassium deficient culture media increased the total of potassium by transmutation of calcium to potassium. He also showed that phosphorus can be formed by the fusion of nitrogen and oxygen:  $\text{N} + \text{O} \rightarrow \text{P}$ . He even marketed a brewer's yeast product that, when applied to composts, increases their potassium content.

### Panos T. Pappas

In 1998, Pappas published an article suggesting that biological transmutation occurs as a form of cold fusion in the cellular membrane sodium–potassium pump. According to Pappas, the ions are not pumped back and forth through the membrane, but instead transmuted back and forth between Na and K.

### Jean-Paul Biberian

Experiments were performed with seeds: wheat and oats as well as bacteria: Marine bacteria (*Marinobacter* sp strain CAB) and *Lactobacillus*. In most of the experiments, variations in the concentration of minerals have been observed. In particular, it is interesting to note that when the seeds grew, heavy metals decreased in large amounts. Even though these results are only preliminary, they confirm the observations made by others, in particular Kervran.

### Vladimir Vysotskii

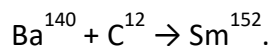
Vysotskii is a scientist from Ukraine. He started working on biological transmutations in the 1990s. He is well known for using modern analytical techniques. In particular, he used

Mossbauer spectroscopy, sensitive to  $\text{Fe}^{57}$ , to measure its production. In natural iron,  $\text{Fe}^{57}$  represents only 2.2% of the total. The main isotope of iron is  $\text{Fe}^{56}$ , which represents 91.7%. Measuring  $\text{Fe}^{57}$  is also easy by mass spectroscopy since there is no possible interference with another element. The proposed transmutation is  $\text{Mn}^{55} + \text{D}^2 \rightarrow \text{Fe}^{57}$ .

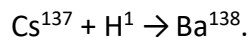
The experiments conducted by Vysotskii and Kornilova were performed with bacteria capable of developing in heavy water. They chose *Bacillus subtilis*, *Escherichia coli* and *Deinococcus radiodurans*, as well as a yeast culture *Saccharomyces cerevisiae*. When manganese was introduced with  $\text{MnSO}_4$ , a clear spectrum was measured, indicating that manganese had been transmuted into iron. The authors analysed the material by time-of-flight mass spectroscopy showing that the mass 57 peak was as large as that of mass 56. This is another confirmation of the production of  $\text{Fe}^{57}$ . Vysotskii and Kornilova have also analysed another reaction  $\text{Na}^{23} + \text{P}^{31} \rightarrow \text{Fe}^{54}$ . In natural iron,  $\text{Fe}^{54}$  represents only 5.8%. The bacteria developed in a medium without iron, and after development they measured  $\text{Fe}^{54}$  as large as  $\text{Fe}^{56}$ .

In similar experiments they observed the following reaction  $\text{Cs}^{133} + \text{H}^1 \rightarrow \text{Ba}^{134}$ .

In experiments destined to reducing radioactivity, they conducted experiments with synthetic microbiological cultures, which were up to 20 times more effective than the standard microbiological cultures. It was shown that  $\text{Ba}^{140}$ , which is radioactive with a half-life of 12 days, transforms into  $\text{Sm}^{152}$ , which is stable with the possible following reaction:



Interestingly,  $\text{Cs}^{137}$ , which is radioactive with a half-lifetime of 30 years, transmutes into  $\text{Ba}^{138}$ , which has a much shorter lifetime of 310 days.



This work is certainly the best proof of biological transmutations.

Edwin Engel, Rudolf Gruber

In 2006, Engel and Gruber [35] from Germany wished to confirm Kervran and Baranger's works. They showed that during germination, manganese transmutes into iron. They used mung beans sprouted in  $\text{MnCl}_2$ . They showed an increase of iron. They assumed the following reaction  $\text{Mn}^{55} + \text{H}^1 \rightarrow \text{Fe}^{56}$ .

Goldfein

In 1978, an officially funded effort from the U.S. Army Mobility Equipment Research and Development Command, Fort Belvoir, Virginia, positively confirmed that mechanisms for elemental transmutations could occur in biological systems. The work was performed under the direction of Emil J. York, Chief of the Material Technology Laboratory. Solomon Goldfein was the



principal investigator for the effort. Robert C. McMillan, Chief of the Radiation Research Group of the laboratory, provided guidance on matters of physics and nuclear physics. The abstract of the final report reads as follows:

*“The purpose of the study was to determine whether recent disclosures of elemental transmutations occurring in biological entities have revealed new possible sources of energy. The works of Kervran, Komaki and others were surveyed, and it was concluded that, granted the existence of such transmutations (Na to Mg, K to Ca and Mn to Fe), a net surplus of energy was also produced. The proposed mechanism was described in which Mg adenosine triphosphate, located in the mitochondrion of the cell, played a double role as an energy producer. In addition to the widely accepted biochemical role of Mg-ATP in which it produces energy as it disintegrates part by part, Mg-ATP can also be considered to be a cyclotron on a molecular scale. The Mg-ATP when placed in layers one atop the other, has all the attributes of a cyclotron in accordance with the requirements set forth by E.O. Lawrence, inventor of the cyclotron.” “It was concluded that elemental transmutations were indeed occurring in life organisms [sic] and were probably accompanied by a net energy gain.”*

Goldfein postulated a conformational structure of a stack of Mg-ATP molecules forming a helical chain. The Mg-ATP chelate produces oscillating electrical currents, which act as a micromini-cyclotron that accelerates hydrogen ions to relativistic speeds with sufficient potential to transmute an element to the next higher number. It was concluded that the elemental transmutations occurring in living organisms are accompanied by losses in mass representing conversion to thermal energy, and that such energy probably is a net gain when compared to the amount required to affect the transmutation.

### Rene Quinton

Probably, the most significant and groundbreaking experiment to demonstrate biological transmutations was undertaken by Rene Quinton (French biologist and physiologist). Rene and his medical team drained a dog of all its blood and replaced it with isotonic (diluted) seawater. It could be assumed that the dog should have died immediately, however the dog lived and in time became more rejuvenated. On day one after the transfusion, 50% of the blood components had reappeared in the dog. On day four almost 100% of the blood components were restored in what appeared to be proof of the natural process biological transmutation (a change from one element to another) in all living species.

Quinton had proven that seawater, properly formulated and under certain conditions is virtually identical to human blood plasma. He subsequently used diluted seawater, as a **marine plasma**, as a healing agent on many patients in France and Egypt. In effect, he was using the seawater as a marine plasma to remineralise blood, restore electrolytes, correct blood p/h and thereby restore the *internal terrain* of sick people. Later, Joel Wallach in his book, *Rare Earths and Forbidden Cures*, demonstrated that the absence of a single mineral (eg. selenium) could lead to as many as 10 different disease symptoms.

## Conclusion

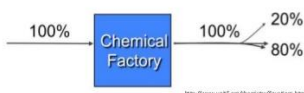
The **law of conservation of mass** or **principle of mass conservation** is valid in physics and chemistry, and states that for any system closed to all transfers of matter and energy, the mass of the system must remain constant over time, as the system's mass cannot change, so quantity can neither be added nor be removed. Therefore, the quantity of mass is conserved over time.

### Law of Conservation of Mass



Antoine Lavoisier discovered the Law of Conservation of Mass.

The total **mass** of the **reactants** or starting materials must be **equal** to the **mass** of the **products**.



### Law of Conservation of Mass Lavoisier (1743-1794)



**In a chemical reaction, matter is neither created nor destroyed, it is transformed into something else.**

The law implies that mass can neither be created nor destroyed, although it may be rearranged in space, or the entities associated with it may be changed in form. For example, in chemical reactions, the mass of the chemical components before the reaction is equal to the mass of the components after the reaction. Therefore, during any chemical reaction and low-energy thermodynamic processes in an isolated system, the total mass of the reactants, or starting materials, must be equal to the mass of the products.

The concept of mass conservation is widely used in many fields such as chemistry, mechanics, and fluid dynamics. Historically, mass conservation was demonstrated in chemical reactions independently by Mikhail Lomonosov and later rediscovered by Antoine Lavoisier in the late 18th century. The formulation of this law was of crucial importance in the progress from alchemy to the modern natural science of chemistry. However, the mass conservation only holds under certain conditions, considered part of a series of assumptions within classical mechanics. The law will have to be modified to comply with the laws of quantum mechanics and special relativity under the principle of mass-energy equivalence, which states that energy and mass form one conserved quantity.

Consequently, it is now known that the law of conservation of mass does not apply when nuclear reactions are involved. The review of more than two centuries of research demonstrates that this also does not apply in biology. It appears that all living organisms can under some circumstances produce nuclear reactions. However, there is a need to find an adequate theory to explain these results. It is highly probable that such a theory should also be capable of explaining **Cold Fusion**, or more generally, nuclear reactions in condensed matter. Another point is the irreproducibility of some experiments. Probably, in order to produce

significant transmutation of an element, it is necessary that another element be missing. It seems that nature tends to find ways to transmute an element into another element to provide the necessary ingredients for the healthy growth of the four kingdoms of bacteria, fungi, plants, and animals, including human beings. Perhaps, experiments should use seawater for Cold Fusion observations, as seawater has all of the elements necessary for transmutation, along with biology.

Historically, the sequence of discoveries in biological transmutation is the following: Vauquelin was the initiator in 1799. Later Herzelee in 1876–1883 did a lot of research, but his work was removed. Later Hauschka rediscovered Von Herzelee's work. Baranger and Kervran discovered this work. As a consequence of their contribution to the field Zündel continued the work as well as Goldfein. Finally, Vysotskii knowing the work of Kervran brought an important contribution.

This essay shows that biological transmutations deserve a lot of attention from the scientific community. The consequences of this are important for science, medicine, agriculture, and diet. The cost of research in this field is so low compared with other fields that it is unacceptable to ignore its importance to understanding nature.

Studies of the process called Cold Fusion or Low Energy Nuclear Reactions (LENR) over the past 22 years show that nuclear reactions of various kinds can be initiated in inorganic solid materials under conditions similar to those present during the claimed biological transmutations. These reactions all have the basic characteristic of producing energy as would be required of a spontaneous reaction. In contrast, many of the proposed nuclear reactions in biological systems, cannot result in energy production because mass is not lost in the process. Instead, the mass gain would require the concentration of significant energy from the environment. This violates the basic laws of thermodynamics and makes the suggested reactions impossible, according to this Law. In addition, the elements involved in the proposed nuclear reaction must have a way to find each other in the same biological structure and experience, a reduction in their Coulomb barrier before interaction can occur. These several limitations severely limit possible explanations. However, these limitations do not make the nuclear reactions impossible, just more of a challenge to explain. The basic question to be answered is, do such reactions actually occur in Nature? The evidence strongly indicates that some of the observed reactions actually occur, requiring an explanation to be found.

## Junk DNA: not so much junk after all

A long-standing puzzle in evolution is why new species and genes seem to arise out of nowhere. In the case of genes, and specifically the *so-called junk genes* seem to quickly take over functions essential for an organism's survival. A new study in fruit flies may help solve that puzzle. It shows that some new genes quickly become crucial because they regulate a type of DNA called heterochromatin. Once considered *junk DNA*, heterochromatin actually performs many important jobs, including acting like a tightly guarded prison: It locks up *bad actor* genes, preventing them from turning on and doing damage.

Heterochromatin is also one of the fastest-changing bits of DNA in the body, so the genes that regulate it have to adapt quickly just to keep up, according to evolutionary biologist Harmit Malik at the Fred Hutchinson Cancer Research Center in Seattle.

**Scientists have documented many cases of genes that seem to arise from scratch and give an organism a new ability in disease regulation and healing.** For instance, one such gene in fish makes a novel antifreeze protein; another in flies is essential for flight. About a decade ago, researchers discovered that new genes do not just confer new functions; some may actually be necessary for survival. In the fruit fly *Drosophila melanogaster*, as many as 30 percent of *new* genes are essential, with some arising as recently as 3 million years ago, and this is a flash in evolutionary timescales. The discovery overturned a long-held belief that important genes do not really change much over the course of evolution.

Malik's team investigated a large family of genes in fruit flies that regulate other genes, turning them on and off for various tasks in the cell. It found that within the family of 85 or so genes, the genes that were evolving more rapidly were more likely to control essential functions for the fly. In fact, 67 percent of rapidly evolving genes were essential compared with 20 percent in the slower-evolving group.

The current science dogma is completely opposite to what has been observed and explained. The team found that one of the new essential genes, dubbed *Nicknack*, issues instructions for a protein that binds to heterochromatin, although the details remain unknown. To see how quickly *Nicknack* might have taken over an essential function, the researchers replaced the *Nicknack* gene in *D. melanogaster* with the *Nicknack* gene in its closest evolutionary relative, *D. simulans*. The two species of flies split into two branches of the fruit fly tree roughly 2.5 million years ago. Scientists would typically expect the *Nicknack* gene of *S. simulans* to be basically the same as the one in *D. melanogaster*, because it is essential and therefore would not have changed much over the short span (in evolutionary terms) of a couple million years.

They tested this theory by swapping the gene from *D. simulans* into the *D. melanogaster* fly, expecting that if the genes were the same, the trade would have no effect. But instead, the female flies survived the swap, but all the males died. Malik thinks the difference between the sexes has to do with heterochromatin: The Y chromosome contains a lot of it.

It seems good enough to do its function in female flies, but in male flies, where there is a huge block of heterochromatin, it cannot function. In other words, the gene from one species is no match for its counterpart in the other. Consequently, the result suggests that in the 2.5 million years since the two species split, *D. melanogaster* evolved its own version of *Nicknack*. And because the swap adversely affected the males, with their abundance of heterochromatin in the Y chromosome, the researchers concluded that *Nicknack* must play some crucial role in regulating heterochromatin. And since heterochromatin evolves so rapidly, the *Nicknack* gene has to evolve rapidly too, so it does not become obsolete.

The moral of this new science is that there is potentially a lot of junk science that still needs to be discarded in favour of the sciences of transmutation or transformation, including spontaneous creation of genes and species. **It seems that nature is well ahead of the current dogma of mainstream science, and mainly the evidence of transmutation from deep within the Earth where water is created to the biological transmutations in microbes, plants, animals, and humans.**

## Walter Russell theories

### The Living Universe

Walter Bowman Russell (May 19, 1871 – May 19, 1963) was an impressionist American painter (of the Boston School), sculptor, autodidact, and author. His lectures and writing place him firmly in the New Thought Movement. Russell wrote extensively on science topics, but these writings were not taken seriously by scientists. However, it was in science that Russell left his least known and perhaps his greatest legacy. While steeped in the discoveries and frontiers of his own time, Russell's science essentially is a thorough reworking of a Taoist or pre-Socratic world conception in modern terms. Russell's scientific cosmology is rooted in the idea that **all phenomena, from star systems to atomic systems, arise from the same infinite source to live, grow, and die by precisely identical processes.** Hence, there is *no fundamental difference* between animate and inanimate matter in Russell's universe -- all are living manifestations of the life-force energy in the universe. We could call **this life-force energy, nature**, or even God for some people. In other respects, life force. The central energy or power that moves through all living things; it is variously known as: Prana in Ayurvedic medicine, Chi in Chinese medicine, Vitalism in Chiropractic, and Vital force in Homeopathy.

Russell's theory is that all bodies in all the universe are the same in all respects, whether they are electrons, cells, rocks, metals, trees, men, planets, or suns. **All of them live and die in the same manner.** All breathe in (Oxygen) the **charging breath of life** and breathe out (Carbon dioxide: CO<sub>2</sub>) the **discharging breath of death**. All of them compress heat and polarise when they breathe in, and expand, cool, and depolarise when they breathe out. This principle can be applied to the wearing of masks to supposedly prevent the transmission of COVID19. However, masks will cause people to re-inhale CO<sub>2</sub> and this will increase blood acidity that causes low blood oxygen levels, and consequently lower cellular function, including low respiration, memory loss and possibly faster onset of Alzheimer's.

Therefore, Russell's universal mechanics hinges on a reinterpretation of the ancient, *unified field* theorem of *yin and yang*. Life, not only biological life, but the existence of planets, gases, and metals as well, is caused by increasing compression and death, by expansion. In the case of water this could be the transition from ice to vapour. These two processes, which he also terms *charging* and *discharging*, are not seen as separate forces but as opposite stages and directions of one process, much like the winding up and subsequent unwinding of a spring. Life dominates every form from its inception to the point of maximum compression, when the

spring cannot be wound any tighter; compression then begins to decrease, radiation assumes dominance, and the **process of releasing life's charge of dying unfolds**.

To Russell, the elements of matter are also living entities in various stages of birth, growth, and decay. Carbon, the basis of organic life, is the expression of matter at maturity; elements of higher atomic weights are already dominated by the aging side of the pendulum's swing. In the heaviest elements, the force of decay reaches near-total dominance over the force of life, therefore radioactivity (eg. nuclear energy) is death incarnated.

### [The secret life of radioactive elements](#)

The key to grasping Russell's understanding of radioactivity and ozone is the realisation that all the elements, as in all life forms, are ideally suited to existence within their own natural, local ecology. Thus, all the elements, when left in their natural dimension, serve beneficial and life-giving purposes, including Uranium, later named *Plutonium*.

Alternatively, each octave (see diagram on the next page) or dimension of matter has its own natural pressure zone. The five elements of organic life (C, H, N, O, and Si) all need the normal pressures found at the Earth's surface to exist normally. The natural dimension for the super-compressed, naturally radioactive elements (radium, uranium, plutonium, etc.) is deep underground, where they are widely dispersed in solid rock. It is at this depth in the Earth that these radioactive elements, and far from being deadly or poisonous, actually have made possible organic life on Earth's surface. Then, through billions of microscopic explosions, they have gradually caused the surrounding rocky crust to break down and release water and other lower-octave elements, as in a geological compost. Water and soil are derived from decayed and dying rock. They are, literally, dead rocks. Out of death in Nature life springs.

That is, **Nature** has to work hundreds of millions of years to decay solid rock and metal sufficiently to create enough decayed surface, and an atmosphere, for organic life to become possible. The radioactive metals made that possible. Radioactive metals are dead and dying bodies. They belong underground just as dead animal bodies belong underground. They are not poisoning in their own environment. Man makes them poisonous by removing them from their purposeful environment. Likewise, the chemical elements of the Earth which are not too far from carbon (ie. potassium, selenium, iodine, etc.) will not hurt you, while the further they are beyond carbon the more deadly they become in humans and animals.

Meanwhile, back at the *laboratory of established or mainstream science* and the *government chambers of policy making*, it is highly unlikely that anyone is talking about Russell's assessment of the life threatening issues, let alone his suggestions for solutions. However, what makes Russell's work so difficult for mainstream science to accept is that it spurns all divisions between physics and metaphysics, and proposes a comprehensive, logical explanation for nature and atomic physics in the same breath.

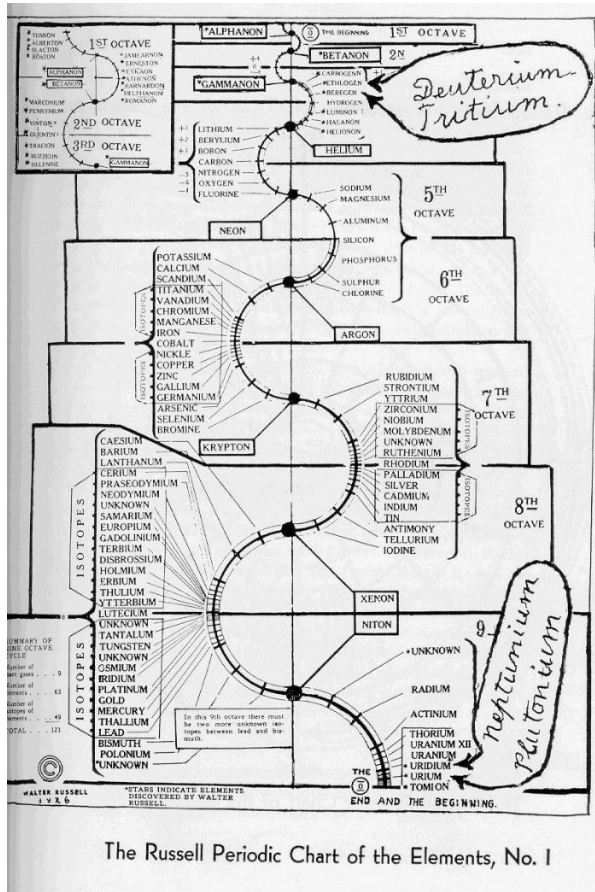
### [Walter Russell and the macrobiotic movement](#)

Russells' application of the yin/yang principal to physical entities, human relationships and the

social order seems extraordinarily direct and simple to grasp, and as such would seem a valuable complement to the macrobiotic health/dietetic tradition.

The following passages from his 1957 book: *Atomic Suicide* sheds some light on Russell's views on diet and health: ***The blood is of first importance of all the elements which compose the body. The nervous system could be entirely paralysed, and the body would still function, but the blood has deep instinctive awareness of its existence, and the body which does not have a happy, rhythmic blood condition cannot possibly retain its normalcy. Even the food one eats should be happy. It should be cooked with love and eaten joyfully, and there should be a joyful realization of love in one's deep breathing and exaltation during the process of taking food into one's body. The food you eat becomes blood and flesh of your body, and the manner in which you eat it, and your mental attitude while eating it, decides your blood count, the balance between acidity and alkalinity of your digestive machinery, and your entire metabolism. Your Mind is you and your body is the record of your thoughts and actions. Your body is what your Mind electrically extends to for recording.***

Curiously, though, his work has elicited little recognition even from within the nominal macrobiotic movement. This is a significant loss for a community purporting to be ever on the lookout for Western cultural and philosophical roots, and for Dr. Walter Russell may well represent the apex of what the West has to offer in original macrobiotic thought.



Walter Russell's Table consists of **Octaves**, and, whilst ignored by mainstream science, has proven worthwhile in hindsight, after a missing element has been discovered, the Table of Elements of Russell actually already defined it. The Periodic Table of Elements consists of 9 Octaves.

## A living and dying Universe

Walter Russell often asserted that nature's universe is *a two-way, not one-way universe*. The death force or *winding down principle* is familiar to us as the force of **entropy** (decay), the famed Second Law of Thermodynamics. The Law of Entropy states that all systems gradually lose energy (that is, energy becomes less organised and therefore unavailable to perform work) through dispersal of heat; hence, the universe is destined to die a *heat death*. Russell disagreed, and detailed the mechanics of an opposite, balancing force, the life-organising force, which he also termed *generoactive*. **Years later, Buckminster Fuller coined the term *syntropy* to describe entropy's complement.** Russell also likened these twin forces to the *charging and discharging of a battery*, or the *winding and unwinding of a spring*. How rapidly or gradually a system unwinds after reaching maturity depends on a variety of factors, principally its degree of balance within its local environment. Therefore, the relaxation and dissolution of life may occur as a slow fermentation, decay, a burst of flame or an explosion. Russell says that *a decaying tree, which takes fifty years to go back into the ground, is exploding. If you burn it, however, the flame is a series of quick explosions which will do in two hours what Nature intended should take fifty years.*

Central to Russell's scientific conclusions is this observation: the state of rest, the source from which all life arises and to which it ultimately returns, is the *normal* state. In other words, it takes increasing effort to *wind up* into greater density (to live), while it takes literally no effort at all, once a system reaches maximum compression, to unwind again, to die. Most significantly, the force of the unwinding/death phase (entropy) is proportionate to the total effort (syntropy) expended in winding up to that point.

For example, it may take many years of consuming burnt steak and synthetic ice cream, perhaps along with exposure to chemical contaminants, to reach the condition disposing one to bowel cancer. The effort expended by the individual, the food industry, the chemical factories and even the cattle involved, are considerable; at the point of maximum compression (when the body cannot hold itself together any tighter) that mass of effort reverts into a forceful, effortless unwinding. *What goes in, must come back out.*

To arrest the course of the disease requires a tremendous, renewed exertion of compression and life effort, commonly described as syntropy or the *will to live* factor or, in macrobiotic thought, as the capacity to self-reflect and change one's personal habits. In the case of human illness and dying, such a reversal through renewed compression is often possible, just as it is possible to arrest the burning of a tree with cold water, or to slow fermentation with salt. It is not so easy to halt the unwinding process of gunpowder, an electrical short-circuit, or the decay of radioactivity.

## The Spiral of Elements

As in the life of his contemporary Georges Ohsawa, the modern founder of the macrobiotic movement, Russell was absorbed in his later years with both the cosmic meaning and the immediate dangers of atomic science. Also like his Oriental counterpart, Russell vividly and



brilliantly expressed his grasp of universal dynamics in a spiral chart of the elements. Russell's atomic charts placed all the atoms as points along a continuous spectrum of increasing compression, *much like the notes of an ascending musical scale*. The musical simile is not casual: Russell's atomic scale is **harmonically organized in octaves**, with the **inert gases** (helium, neon, argon etc.) acting **as the keynote of each octave**. Not surprisingly, Dr. Russell was also an accomplished composer.

Russell held that the hydrogen octave, far from being the beginning of the atomic scale, was in fact preceded by three *inaudible* atomic octaves, yielding a full spectrum of nine octaves. These first three octaves, involving wavelengths too vast to measure, would be beyond the threshold of physical sensing (that is, beyond detection by normal instruments of science). It was the lack of this knowledge, Russell contended, and the misconception of hydrogen as the first element that forced scientists to view deuterium ( $^2\text{H}$ ) and tritium ( $^3\text{H}$ ) which Russell originally called *Ethlogen* and *Bebegen* (see diagram on page 12), now well-known as components of the *heavy water* used in today's nuclear reactions as isotopes of hydrogen instead of true tonal elements in their own right. For example, deuterium and tritium can be found in the deep (earth generated) groundwaters and natural springs as common components of water.

**Isotopes might be compared to the accidentals, sharps, and flats of single musical notes.** On the other hand, Russell asserted, that many of the higher octave *elements* in fact are but *isotopes of higher-octave versions of carbon*. Carbon, lying in the center of the fourth octave, is the balance point of perfect stability and the mature expression of the entire spectrum, and as such serves as the basis for organic life. Russell pointed out that roughly 98 percent of organic life forms are composed of carbon and four other elements (hydrogen, nitrogen, oxygen, and silicon) which all are grouped together with carbon in the fourth octave (except silicon, a transmutation of carbon in the next octave up, which forms the basis of the Earth's crust and of soil). In a sense, the *purpose* of the entire atomic spectrum is to create carbon life forms. The further you compress past carbon the more readily the pressure and heat of compression will explode into decay. The super-compressed elements of the 7th, 8th and especially 9<sup>th</sup> octaves (radium, plutonium, etc.) are simmering at the breaking point, and therefore the tremendously explosive pressures of the radioactive metals.

## Effects of radioactivity on water

It is astonishing that in 2021, while writing this essay, that the global knowledge about the science of water is almost non-existent. Consequently, the knowledge about the effects of radiation (from microwave ovens, 4/5G emissions, electricity, etc.) on water structure is only in the literature of a few individual scientists who have examined this association. To understand the effects of radiation on water, it is important to understand some aspects of water structure, and water as a conscious entity.

Water in its natural state (eg. in a pristine flowing stream) is in a **coherent** state. Water in this state has a 6-sided crystalline structure and holds a negative (-mV) charge. The array of

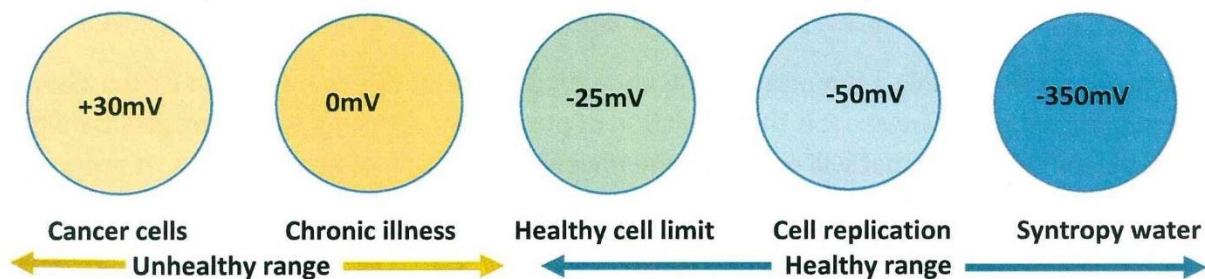
crystalline structures in water is infinite. Water can lose its coherent state when it is not flowing (ie. lacks a continuous **vortex** action), exposed to radiation, electricity, and toxic compounds, etc. These influences produce a 5-sided crystalline structure in the water and a positive (+) charge. This + charge water is then in an **incoherent** state. That is, the form and phase of the water energy is out of phase (ie. incoherent).



The vortex action in flowing water produces a coherent structure in the water with a 6-sided crystalline form (see image above). Also, in the pristine, natural world this water form or structure will hold in the water. That is, when water becomes incoherent water always strives to return to its structured form through a vortex action. Alternatively, water can be returned to its coherent state using magnetism to increase the electrons (negative charge) in water. Magnetism can be used to create a permanent or temporary coherent state in still water, depending on the magnetic array or geometry of the technology used for this purpose.

Water has a capacity to receive, store and transmit information. This **memory or conscious like capacity of water** is critical to understanding how water can transform life, including the balance of minerals. Water can hold onto toxic memories for years and pass this information to cells. Water can only erase this toxic memory when it is reverted to a structured, negative charge form. For example, if a toxin is put into a pristine flowing stream, the water molecules affected and emit or erase this memory within a short period of time by transforming the compound back to its elemental forms. For example, fluoridation can be transformed from a toxic compound (sodium silicofluoride:  $\text{Na}_2\text{SiF}_6$ ) back to Fluoride, Sodium and Silica in structured water. Therefore, it is best to consume only structure, negative charge water.

Healthy cells have a greater capacity to generate energy, and stressed cells have less energy for regulation (including reproduction) and healing. All cells, in all living species, functions at an optimal level in terms of cell regulation and healing when the cell holds a negative (-mV) charge potential.



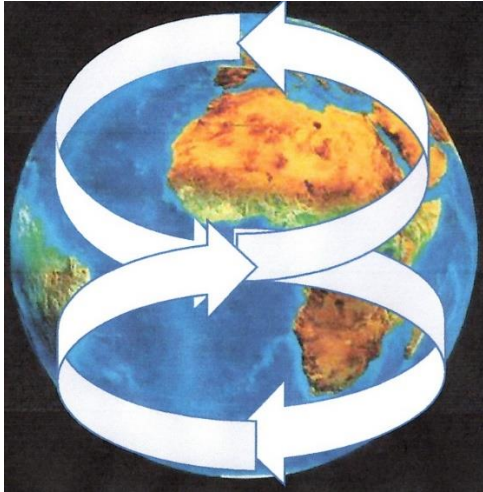
A cell loses its function or potential when the cell loses electrons, and then the cell charge changes polarity towards a positive (+mV) charge. This process is called **entropy** and is the pathway to decay and disease. The opposing force in cells that attempts to counter cell decay is called **syntropy**. Below is a table of entropy and syntropy forces that affect cell function.

Entropy forces that cause cell decay	Syntropy forces that sustain cell health
Stress (heightened and continuous)	Drinking negative (-) charge water
Drinking + charge, urban water	Eating fresh organic food
Eating processed, high heated food	Adequate sunlight (eg. red light/morning) each day
Fast food (regular)	Regular contact with nature
Low sunlight exposure	Low radioactivity exposure
Radioactivity (microwave, 5G)	Embracing love, joy and hope
Toxins (in air, water, and food)	Sustained purpose in life
Pharmaceutical drugs	Listening to harmonic music, ie. Mozart
Low blood oxygen (hypoxia)	Increasing blood oxygen (- charge)
GMO foods	Living in a pristine environment
Toxic emotions such, ie. anger, etc.	Cooking food on low heat

Most illness are autoimmune and occur when the immune system cannot ward-off a threat in time, and then something fails. The only defence is the immune system, whereby it **raises the oscillating frequency of every atom in your body** and increases the proficiency at which the immune system operates as well as eliminating the entropy toxins listed above.

The water in cells is constantly striving to sustain a high negative (-) charge and to convert positive (+) charge that enters the cells directly (eg. through the digestive system) or indirectly entrained as energies from the environment (eg. radiation, toxic emotions, etc.) to a negative charge. However, if cells are constantly overwhelmed with positive charge the cell polarity will change to positive, whereby entropy or decay occurs at a faster rate.

Adequate, daily sunlight exposure on skin is critical for cells to receive photons of light. This is critical in all forms of life, eg. seed needs this exposure to light and other natural, subtle energies of the Earth to be activated for growth by structured water. That is, cells know how to raise the oscillating frequency to deal with organ and system failures.



*Earth's magnetic field, also known as the **geomagnetic field**, is the **magnetic field** that extends from the **Earth's** interior out into space, where it interacts with the solar wind, a stream of charged particles emanating from the Sun. The Earth has magnetic energies, however while the Earth does have a North (negative) and South pole (positive), the Earth is not a magnet. The magnetic field is throughout the Earth and spirals in a figure 8 flow as illustrated on the image to the left.*

**Magnetism and sunlight**, along with many other subtle energies influence cell function. For example, the New and Full moon phases induce and explosion of energy within the seed DNA, in the presence of structured water. Also, plants respond directly to Earth's gravitational attraction (gravity energy). Stems grow upward, or away from the center of Earth, and towards light. Roots grow downward, or towards the center of Earth, and away from light. These responses to external stimuli are called tropisms. Plants' growth response to gravity is known as gravitropism. That is, the growth response to light is phototropism and both tropisms are controlled by plant growth hormones, and particularly by the presence of structured water and balanced microbe ecology. For example, root density (includes water and carbon holding capacity) and depth of root growth are significantly greater.



The activation of light photons in cells by cell water is a constant process to transform the light into other energy forms. This light emission from cells is known as biophotons and can be photographed using specially designed cameras. The strength of the biophoton emission is indicative of the health of the living entity. For example, a healthy organic fruit will have a much higher biophoton signature than a Genetically Modified Organism (GMO), as the GMO food does not have coherent water in its cells and the plant is synthetic and not natural. The biophoton emission from living entities is called **the spark of life**, and its strength of health is

purely an outcome of healthy (coherent) environmental factors, eg. seed activated and sustained with negative charge, structured water, microbial balance in the soil, sunlight exposure, no exposure to toxins (chemicals and radiation), etc.

The biophoton examples on page 28 illustrate that the *orchestra of life* in the cells of each entity is optimal. This illustrates that measuring the **quality of life** is more important than the classic science approach of measuring the quantity of life.

Plants have no ego's and therefore are constantly seeking and utilising the syntropy elements of life, eg. structured water, sunlight, microbes, and soil nutrients to maximise their potential for reproduction. Numerous experiments by **Phi'on**, Rudolf **Zantinge** and others have shown that plants lose biophotons signal strength or life force energy when they are exposed to entropy forces, like electricity, radiation, toxins (air, soil, and water) and chemical fertilisers. This low of *life force energy* occurs because the plant cells have lost cell water coherence and therefore cell energy. However, water and the DNA in plants have memory to transform the plant back to its original potential. For example, in experiments by Zantinge, he was able to demonstrate that plants that had lost a capacity to produce both male and female flowers could recover this genetic capacity when watered with coherent, structured water. It was the coherent water that activated the seed DNA to achieve its optimal life potential.

Similar results have been achieved by Phi'on with 100% seed generation, increased flower size and perfume, increased frost resilience, and vegetable growing to much larger sizes, and with increased flavour and storage capacity after harvest.



It is the unique capacity of coherent, structured water to receive (entrain), store and transmit information that enables structured water to transform genetic codes and transmute minerals. The key message about water is *you cannot tell water what to do. It is consciously smarter than humans, animals, plants, and microbes*. However, when humans contaminate water with chemicals, radioactivity and change the polarity of water to a positive (+) charge, the water will become incoherent. It could be said that all urban and agricultural water is incoherent and can only be returned to its natural state with a water device that permanently restores the water coherence (see [www.meawater.com](http://www.meawater.com))

People who drink incoherent (urban) water will affect the cells of all organs and systems, and particularly the brain where there is a high concentration of water compared to other human organs. Consequently, people will feel brain fog (light-headedness), indecisiveness, emotional stress, faintness, and low energy. Consequently, the critical link between the brain and the gut will be diminished and there will be less communication capacity through the Vagus Nerve that links the brain to the gut and every other organ and system.

## Evidence of concurrent, progressive, or synchronised entrainment and transmutations

**Phión** has undertaken many experiments where the results or outcomes defy classical science. However, while answers may lie in quantum science, the material and chemical changes that are recorded in the following examples, cannot be fully explained. Clearly, in some cases energy entrainment has occurred and minerals have undergone transmutation into other elemental forms.

Energy can be in many forms, such as electro-magnetic energy of sunlight, magnetic, gravity, etc. Observation of energy production can stimulate information; however, the mechanism of the energy formation and its sources can be a mystery.

For example, in a **Phión** experiment to make an improved form of magnesium oil in a stainless-steel container, the following and unexpected things happened; and the source of the energy to make it happen is still not solved.

On page 31, is the image of the stainless-steel pot that contained seawater, concentrated sea water, dead sea minerals and Himalayan salt, and these ingredients were heated to 100<sup>0</sup> C and left to cool to room temperature. Within 10 days the pot was transformed (expansion) through a natural energy or geometric source.



*The pot continued to disintegrate after 10 days with other splits forming and opening plates out in a rose like pattern. This is the 3rd pot destroyed using this technique and formulation. Has a subtle and vortex or geometric energy, expanded, and changed the metal integrity of the pot? Certainly, this pot contained the ingredients (an elemental soup with water and light) for energy production and perhaps the trigger for life. There is also evidence of expansion/stretch lines and deformation/folding as it would be with an Expanding Earth.*

While there was no known, spontaneous emergence of life from this pot, it does leave many questions to ponder: what form of energy was generated from this *elemental soup* is a

fascinating potential piece of the puzzle to life's evolution, ie. entraining the energy of inanimate matter to create the form and power of life.

It is likely that first surface water appeared in a structured, six-sided crystalline form because the combination of light and its flowing vortex movement created this natural form. Seawater then developed with a % composition of minerals that remains relatively constant, and with chlorine and sodium as the primary minerals (eg. NaCl), and along with Potassium (K) are fundamental to cell function.

The table on page 32 illustrates the dynamics of water treated with a **Phión** MEA water device and the potential for oxidation and reduction of oxygen, and potential transmutation (*CL Kervran, Biological Transmutations*) of minerals in a magnetic (energy) field in the presence of biology.

Modern science has not yet identified the primary source of the entrainment of photonic and acoustic energies that differentiate living and inanimate matter. Vibratory relationships observed among the atoms comprising bodies and all matter, are recognised as the essential key for understanding elemental nuclear transmutations, opening the door to atomic resonance. The symphony of atoms in a crystal lattice (eg. water, salt minerals) generates the dynamic relationships that facilitate the natural low energy conversion of one element into another. The precise framework of phonon resonance reveals a new class of resonant atomic recombination that occur at critical temperature thresholds (as observed in the structural changes in the pot, mentioned above). This reveals the underlying mechanism for precision temperature regulation in warm-blooded animals and exact temperature range requirements exhibited by the innumerable abundance of lifeforms.

The table shows the comparison by **Phión** between raw (un-vortexed) concentrated seawater (1) and the same seawater after treatment with a MEA water device (2). The % change is shown in (3). The raw un-vortexed, concentrated seawater was treated with a 2" inner diameter MEA water device for about 2 hours. This involved pumping and continuous cycling of 1000L of the concentrated seawater through the MEA device. The seawater was in a 1000L IBC container and exposed to sunlight energy.

COMPOUND	MEA Device (2)	% change (3)	UNTREATED (1)	DEAD SEA	AVG SEAWATER
Sulfate as SO <sup>4</sup>	34,000	+90.0	17,900		27,010
Chloride	217,000	+1.4	214,000	230,400	193,450
Calcium	58	-3.3	60	17,600	42
Magnesium	87,700	+0.6	87,200	45,900	12,950
Sodium	6,790	-12.6	7,770	36,600	10,752
Potassium	8,930	+3.8	8,600	7,800	3,900
Totals	<b>354,478</b>	<b>+5.65</b>	<b>335,530</b>	338,300	248,104

The increase of 5.65 % in the major minerals (mass gain) of seawater is significant, and specifically the 90% increase in Sulphate as  $SO_4$ . Also, sodium has decreased by 12.6%. This might be some small evidence of mass increase for the Earth along with increasing gravity.

These effects on seawater may be accounted for by:

1. The restructuring of the water from a pentagonal (5 sided) structure to a hexagonal (six sided) structure and the water now having a permanent negative charge.
2. The effects of sunlight on the seawater during the treatment process.
3. The dynamics of reduction and oxidation of oxygen in structured water.
4. The dynamics of transmutation of elements.

When water goes through a **Phión** MEA water device it will change the water voltage from a positive to a negative voltage, however any change in mineral composition is dependent on ***time taken for particle settling, including outgassing or exclusion of particles/gasses.***

The **Phión** MEA water device does not destroy matter or create a new energy field. Matter (ie. a particle) is created whenever you give a field enough energy to excite it to a state containing a particle. Matter is destroyed (ie. changed, transformed or trans-mutated) whenever that energy is transferred to some other field and the field is no longer excited. The thing that cannot be created nor destroyed are the energy fields themselves. You can give or take energy from a field, but you can never make the field itself disappear, or create a new field out of nothing. For example, you can use matter to create energy ( $E=mc^2$ ) and you can use an energy field to create matter (consequently, the Earth has many mineral elements). However, time and space have dimensions and limitations (laws) within the universe.

In another example of transmutation, *magnesium oil* (made by **Phión** from concentrated sea water, seawater, and other salts) was aged in an open 200L barrel for 2 years and upon analysis the calcium and strontium had increased by 20 and 21-fold, respectively. Iron increased by 30-fold and all other elements measured a % increase. See results of a laboratory test from *Intertek, Victoria, Australia (dated 1 April 2010)* in the table below.

Test	Units	Mg Oil (not aged)	Mg Oil (Aged for 2yrs)	% change
Magnesium	%w/v	8.72	8.86	+1.6
Magnesium Chloride (MgCl <sub>2</sub> )	%w/v	34.1	34.7	+1.8
Potassium	%w/v	1.1	1.2	+9.1
Sodium	%w/v	1.3	1.4	+7.7
Aluminum	mg/L	<1	1	+10
Calcium	mg/L	<b>135</b>	<b>2690</b>	<b>+1893 (20 fold)</b>
Copper	mg/L	<0.5	0.5	+10
Iron	mg/L	<b>0.4</b>	<b>12</b>	<b>+2900 (30 fold)</b>
Lithium	mg/L	8	9	+12.5
Manganese	mg/L	8	9	+12.5
Strontium	mg/L	<b>1</b>	<b>21</b>	<b>+2000 (21 fold)</b>
Zinc	mg/L	<0.5	0.7	+60



*This liquid was not processed through a MEA device however, the liquid would have contained biology from the ocean waters.* This experiment demonstrates the dynamics of subtle energy and biological interactions and element transmutations within waters. Also, it is highly likely that numerous oxidation and reduction processes were involved. Clearly, an energy field has created matter (elements and compounds). In fact, *Kervran in Biological Transmutations*, postulates that **Silica (Si, Atomic No. 14) plus Carbon (C, Atomic No. 6) = Calcium (Ca, Atomic No. 20)**. Others suggest that daily intake of **silica rich foods** is the key to sustaining a balanced calcium level in cells.

Further, Kervran suggests that the daily intake of calcium by cows and hens is much lower than the calcium in cow's milk and calcium in hen's eggs, and that biological transmutation must be involved. The critical point here is that transmutations may only occur in the presence of water and biology. The presence of structured water and light in cells may be the trigger for transmutations in living species.

Many of the chemical changes in water depend on the solutes in the water or other watery liquids (eg. seawater, wine, and milk). Also, the outcomes are dependent on whether the water is in a structured or non-structured (bulk) form. Structured water has a **higher solubility for minerals** than bulk water. Structured water also has a **decreased solubility for dissolved gases**, as experienced when wine is restructured, gasses leave the wine.

Research by Davis and Rawls found that the North-pole magnetic energy structures water and amino acid solutions to an alkaline pH and **increases water surface tension**. South-pole magnetic energy will structure water amino acid solutions to an acid pH and decreases water surface tension. These results have been replicated by **Phión** research.

### Transmutation of septic water minerals

Tests were conducted on the treatment of household septic water by the MEA inline device. The results in the following tables are a comparison between wastewater in a septic tank (Raw septic water) and water after it has been processed through a Phión magnetic (MEA) water conditioner. The conditioner in this case was a 2" inner diameter pipe device. The purpose of the test was to measure the change in the chemical and mineral composition of the wastewater after treatment with the water conditioner device.

The water that is used for this household septic system has already been treated with a ¾" MEA water conditioner and therefore the water that is used for flushing the toilets, showering, cooking, etc. is already conditioned with a MEA device. The primary source of the water is from a bore and from rainwater, generally in a 50:50 mix.

The major differences between the source (unconditioned) water and the raw septic water are:

Description	Measure	Source water	Septic water	% change
pH	mg/L	5.8	6.5	+12
Eh (ORP)	mV	+430	-180	-142
Chromium	mg/L	<0.01	0.03	+200
Copper	mg/L	0.07	0.05	-29
Lead	mg/L	<0.01	0.02	+100
Manganese	mg/L	<0.01	0.13	+1200
Selenium	mg/L	<0.005	<0.01	+100
Zinc	mg/L	0.06	1.1	+1733

The source water also has low conductivity (46 us/cm), slight iron (0.04 mg/L) and comparatively low alkalinity (14 mg/l), Calcium (1.7 mg/L), Magnesium (2.2 mg/L) Potassium (0.6 mg/L) Sodium (5.0 mg/L) and Chloride (7.0 mg/L)

The method for treating the septic wastewater involved pumping 600L of septic water straight from the septic tank into a 1,000L IBC and then cycling this septic wastewater through a 2" MEA water conditioner for a period of about 60 minutes. That is, septic water was pumped from the IBC through the MEA device and returned to the IBC. After about 30 minutes of cycling a dense white gas started to emit from the top of the IBC and continued for about 15 minutes. This gas is assumed to be a range of gasses comprising methane, sulphur, nitrogen, hydrogen, etc. Further tests of this process will be undertaken to test the nature of the gas.

The organic solids from the septic water settled to the bottom of the IBC and all septic smell was eliminated from the resulting water within 30 minutes. Also, the smell was not detected after 2 hours of starting this process and no smell was evident after 3 months.

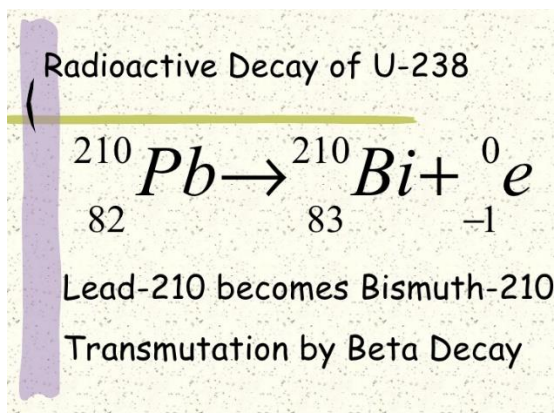
The following table describes the comparison between the raw septic water and water after treatment through the MEA (magnetic) device. The chemical and mineral tests were undertaken by Sydney Analytical Laboratories on 17 September 2014.

Description	Measure	Raw Septic Water	MEA device results	% change	Standard Industry achievement	Comments
pH	mg/L	6.5	6.8	+ 0.7	NA	
Biochemical Oxygen Demand (BOD)	mg/L	730	460	-37	-20	Significantly better than most existing technologies
Chemical Oxygen Demand	mg/L	1310	470	-64	-20	Significantly better than most existing technologies
Total Organic Carbon	mg/L	340	265	-22		Significant change

Nitrate NO3-	mg/L	<0.01	<0.01	nil		
Nitrate NO2-	mg/L	2.9	1.1	-62		Significant change
Ammonia NH3-N	mg/L	61	69	+13		
Phosphate PO4	mg/L	69	35	-49		Significant change
Eh	mV	-180	-260	-44		
Total Suspended Solids	mg/L	800	87	-89	-50	Significantly better than most existing technologies
Arsenic	mg/L	<0.01	<0.01	nil		
Barium	mg/L	<0.1	<0.1	nil		
Cadmium	mg/L	<0.001	<0.001	nil		
Chromium	mg/L	0.03	0.02	-33		Significant change
Copper	mg/L	0.05	0.02	-60		Significant change
Lead	mg/L	0.02	<0.01	-50		Significant change
Manganese	mg/L	0.13	0.12	-7		
Mercury	mg/L	<0.0001	<0.0001	nil		
Selenium	mg/L	<0.01	<0.01	nil		
Zinc	mg/L	1.1	0.24	-78		Significant change

In the table above, the restructuring of the previous de-structured, septic water through a Phi'on water device (2") is a clear demonstration that structured water provides the syntropy force to revitalise the water towards its natural or balanced state (uncontaminated). This state can be expected to accumulate over time as the syntropy energy in the water accumulates and changes the vital properties of the water, eg. BOD, COD, suspended solids, and the ratio of zinc to copper, etc.)

The changes in mineral % are in most cases significant and can only be explained by transmutation.



Clearly, the reduction of **Lead (Pb)** from the septic water by the Phi'on MEA water device did not make lead disappear, however what happened to 50% of the Lead? Perhaps it was transmuted into **Bismuth (Bi)** or some other mineral or precious metal (eg. gold: Au). Therefore, nuclear radioactivity can occur under certain magnetic resonance energy conditions.

These research results suggest that contaminated water, and potentially soil held in suspension in water, can be decontaminated through the use of magnetic resonance energies (ie. a Phi'on MEA water device).

## The gel water in cells: the ultimate transmutation of liquid water

### Introduction

During the late 19<sup>th</sup> and early 20<sup>th</sup> centuries **René Quinton** discovered that body cells are surrounded by a liquid, or plasma, which is similar in its mineral content and degree of concentration to geologically primeval ocean water.

Quinton demonstrated the importance of a perfect balance between intra- and extra-cellular fluids, as well as the fact that the osmotic changes, indispensable for life are carried out thanks to blood plasma and the maintenance of its characteristics. He also showed that isotonic seawater could be used instead of blood plasma. Thanks to this discovery, the name of this marine plasma was popularised as *Quinton's Plasma*.

After years of research, Quinton used a number of canine experiments and demonstrated that his version of the plasma could be used to treat humans successfully, and he supported the thesis with numerous clinical trials. Consequently, his theory was put into practice in the multiple Marine Dispensaries that opened throughout France and contributed to saving thousands of children's lives using marine plasma. Quinton never thought of this plasma as a medicine, but as extracellular fluid, exactly adapted to the needs of living cells.

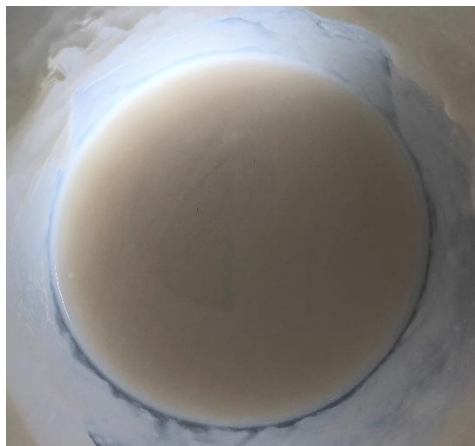
The concept of gel water was further developed by bioengineer **Dr. Gerald Pollack** in his water science laboratory at the University of Washington. His book, *The Fourth Phase of Water: Beyond Solid, Liquid, and Vapour*. Also, the concepts of gel water resonated with anthropologist **Gina Bria's** thesis work on desert-society survival techniques where the Incas and the Aztecs would go for weeks without water, subsisting only on chia and cacti. Interestingly, these plants are full of gel water. Pollack estimates that this previously unknown form of water (found in vegetables, chia seeds, and other foods) makes up more than 90 percent of the water in our own bodies, however there had been little work done to apply those findings to human health practices.

Bria and functional doctor **Dana Cohen** MD have written a book, *Quench: Reclaim your Energy and Health with the New Science of Hydration, Including Your Five-Day Plan to Hydrate*, to explore the science of gel water, as well as its (far-reaching) implications. Gel water is transmitted through the body via our fascia, and therefore understanding it can potentially deepen our knowledge of both collagen and fascia, the way we store water in our bodies, and the role of electricity in body function. Bria and Cohen discuss in their book the anthropological, medical and practical impacts of gel water, along with how to incorporate it into a daily routine.

In respect of gel water in cells, the burning question for science is **how does liquid water transmutate into gel water, and what cellular environment triggers water to go into a gel form?** This question is discussed further in this section of this essay.

### Forms of water gel

Phi'on chief scientist, **Robert Gourlay**, developed a new technique in 2003 of converting seawater into a gel that is often called ORMUS. Phi'on uses this gel in a number of nutritional products, including a 35% base for all of its cremes. See the image below of Phi'on ORMUS gel.



*In the 1970s, David Hudson came across a peculiar-looking substance that had formed on top of the soil. Results showed that Hudson's discovery was a mass of monoatomic minerals. Consequently, there was the discovery of a matter called ORMUS, also called ORMES (Orbitally Rearranged Monoatomic Elements). This substance is also sometimes referred to as monoatomic gold, white gold, white powder gold, M-state, AuM, microclusters, and manna.*

Ormus is believed to be a group of substances with the same number of protons and electrons as their mineral counterparts on the periodic table. Alchemists and alternative medicine supporters believe that Ormus contains supernatural properties, healing powers, and superconductivity at room temperature. According to Hudson, when Ormus is heated at specific temperatures, it changes into different metals. Ormus elements include cobalt, copper, platinum, palladium, iridium, rhodium, mercury, nickel, osmium, ruthenium, silver, and gold.

Ormus is everywhere. The Ormus elements exist in our bodies and in the air, water, soil, and rocks. Plants and animals have Ormus elements embedded into their DNA. According to this theory, it is possible for humans to increase the Ormus content in our bodies and brains by consuming foods and water with high Ormus content or topically apply the Ormus gel. Ormus exhibits quantum physical behaviours such as superfluidity, anomalous response to gravity, Josephson tunnelling, and magnetic levitation.

Gel water is sometimes called structured, ordered, liquid crystalline, or living water. However, gel water is only known to exist as part of a cell. For example, Pollack describes gel water as having an extra hydrogen and oxygen atom, so the molecular structure is  $H_3O_2$ . It has a highly conductive molecular structure, as the extra hydrogen atoms are constantly moving back and forth between molecules, generating electricity. In this phase, water crystals overlap and interlink like lace or crocheted netting, the way snowflakes do. But unlike snowflakes, which are

stationary, gel water creates this structure while remaining in a fluid state. It is not temperature that defines gel water, so much as its shifting molecular structure at a cellular level.

On the other hand, structured water is the natural state of flowing water in a pristine stream. It is the vortex action of flowing water that creates the 6-sided crystalline structure in the water and its negative charge. Water that is not flowing or still water, has a five-sided crystalline structure and a positive charge. Therefore, when people or animals consume de-structured, positive charge water, the body has to convert the positive (+) charge to negative (-) and this requires energy. It is estimated that humans can consume 50% of their energy per day converting positive charge water and food to negative charge. The natural, healthy state of a cell is negative charge (normally -50mV)

While gel water is conceptually similar to sea plasma, it is highly organised (crystalline structure) and different from sea plasma, which has no distinct structure. Gel water can be as thin as liquid, just slightly silkier, or it can develop to be as thick as jelly. The gel-like substance that forms around chia seeds when soaked in water, is water in a gel form. However, research by **Phi'on** has demonstrated that seawater plasma and ORMUS can hold a permanent negative (-) charge when the seawater is firstly restructured with a Phi'on water conditioner before the plasma is made. (see water devices at [www.meawater.com](http://www.meawater.com))

### Cell gel water and wellbeing

Dr. Pollack documented that the water in our synovial fluid, joint fluid, and, importantly, our cells, is gel water. Pollack's work suggests that gel water is more hydrating than liquid water because its unique negative charge allows cell systems to operate more efficiently, and its absorptive qualities help the body retain water. Some studies have indicated that liquid water alone is not sufficient for hydration, as evidenced by cases where subjects could not achieve hydration despite over-drinking.

Gel water also has important implications for our understanding of the way water is distributed throughout the body. We have traditionally understood that water gets distributed via the bloodstream and lymphatic system, however the discovery of gel water suggests that fascia is also a critical system for water distribution. **Fascia is made of collagen (which is full of gel water) and elastin, acting like a hydraulic system that pumps and distributes water more deeply into your tissues.** When you move your connective tissue through exercise, it facilitates the movement of water throughout the body.

Gel water also conducts electricity in the body far more efficiently than regular water because of its density and its unique, constantly changing structure. Foods containing electrolytes (like coconut water and ghee), which release electrical charge when they begin to dissolve inside the body, start a cascade of hydrogen-bonding that triggers the creation of more gel water and, consequently, better hydration.

For many years, we have operated with the assumption that the path to hydration was drinking eight glasses of water daily. However, based on Dr. Pollack's discoveries, we know the picture is actually much more complex, and in fact the whole diet is linked to hydration.

Now, back to the question of how cells make gel water. The answer can generally be based on observations of the environment of a cell. That is, the electrolytes that cells *swim in* (eg. sodium and potassium), hydration of the cell, sunlight energy on skin to entrain photons of light to cells, the presence of collagen in the fascia, and including fresh vegetables in the diet. This cell environment gets back to diet and drinking structured, negative charged water. In respect of diet, fresh organic vegetables and fruit contain the necessary nutrients in the right state (*life-force energy*). Not only are they full of gel water when fresh, but they also contain naturally occurring electrolytes, and their fibre helps the body absorb gel water. For those reasons, a green juice or smoothie is actually more hydrating than a bottle of water. Other ways to enhance cell water are:

- Add lime and lemon juice, and apple cider vinegar to water; the electrolytes help encourage the production of gel water.
- Add a pinch of sea salt, Celtic or rock salt (Himalayan pink salt) into a water bottle. The electrolytes help encourage the production of gel water. Humans need 2 grams of a complex salt per day to sustain hydration and cell function. For example, blood is 82% water and 20% of this water is equivalent to seawater. A litre of blood requires 12 grams of sodium to properly function.
- Drink slow cooked meat broth, that is full of collagen (ie. gel water) and can be used in cooking to make soups.
- Add a teaspoon of crushed chia seeds to a slow cook, smoothies, and other drinks. It is best to crush the chia seeds to create more surface area and eventually more gel.
- Try cooking with Ghee (Ghee is a type of clarified butter that is more concentrated in fat than butter, as its water and milk solids have been removed), which is full of gel water and electrolytes.

The various types of electrolytes are sodium, phosphorous, potassium, calcium, magnesium, chloride, and bicarbonate. In addition to regulating fluids, electrolytes (salts) have many functions. These include:

- transmitting nerve signals from the heart, muscles, and nerve cells to other cells
- building new tissue
- supporting blood clotting
- keeping your heart beating by electrically stimulating muscle contractions
- maintaining the blood's pH level
- regulating the fluid level in blood plasma
- cell hydration.

Gel water does not eliminate the need for regular drinking water however it is known that the absorptive qualities of gel water (ie. slow-cook broth collagen, chia seed gel, etc.), combined with its conductivity, are excellent for hydration. We also know that people who are better hydrated have increased cell function, energy, and mental function. **Phi'on structured water** has a smaller water molecule cluster, therefore it has easier cell penetration. Structured water should be used as a drinking and cooking water.

Light waves from **sunlight** reach the water molecules in our bodies and split them into positive and negative charges, shifting their molecular structure, to create gel water. Therefore, modest sunlight exposure is nature's way of purifying and charging water.

Theoretically, the subtle, negative (-) charge of the planet could help split the water molecules around us and inside us as well, so **earthing** or **grounding** could be another way to boost hydration.

## Exposure to Radioactivity

The official explanation for today's COVID-19 pandemic is a *dangerous, infectious virus*. This is the rationale for isolating a large portion of the world's population in their homes so as to curb its spread. From face masks to social distancing, from antivirals to vaccines, these measures are predicated on the assumption that tiny viruses can cause serious illness and that such illness is transmissible person-to-person.

It was Louis Pasteur who convinced a skeptical medical community that contagious germs cause disease; his *germ theory* now serves as the official explanation for most illness. However, in his private diaries, he states unequivocally that in his entire career he was not once able to transfer disease with a pure culture of bacteria (he obviously was not able to purify viruses at that time). He admitted that the whole effort to prove contagion was a failure, leading to his famous death bed confession that ***the germ is nothing, the terrain is everything***.

While the incidence and death statistics for COVID-19 may not be reliable, there is no question that many people have become unwell with a strange new disease, with odd symptoms like gasping for air and *fizzing* feelings, and hundreds of thousands have died. Many suspect that the cause is not viral but a kind of pollution unique to the modern age, ie. electromagnetic pollution. Today we are surrounded by a jangle of overlapping and jarring frequencies from power lines to the fridge to the cell phone. It started with the telegraph and progressed to worldwide electricity, then radar, then satellites that disrupt the ionosphere, then ubiquitous Wi-Fi. The most recent addition to this disturbing racket is fifth-generation wireless 5G. In a 2020 book: *The Contagion Myth: Why Viruses (including Coronavirus) are Not the Cause of Disease*, bestselling authors Thomas S. Cowan, MD, and Sally Fallon Morell tackle the true causes of COVID-19.



On September 26, 2019, 5G wireless was turned on in Wuhan, China (and officially launched November 1) with a grid of about ten thousand antennas—more antennas than exist in the whole United States, all concentrated in one city. A spike in cases occurred on February 13, the same week that Wuhan turned on its 5G network for monitoring traffic. Illness has subsequently followed 5G installation in all the major cities in America.

Since the dawn of the human race, medicine men and physicians have wondered about the cause of disease, especially what we call *contagions*, numerous people ill with similar symptoms, all at the same time. Does humankind suffer these outbreaks of a new illness from poor health, disturbance in the atmosphere, a miasma, or do we catch the illness from others and maybe some outside influence?

As the restriction of our freedoms continues, more and more people are wondering whether this is new illness is true. Could a packet of RNA fragments, which cannot even be defined as a living organism, cause such havoc? Perhaps something else is involved, like something that has upset the balance of nature and made us more susceptible to disease?

## Health Effects

The potential adverse health outcomes of long term, low level exposures to microwave radiation from telecommunications technology are:

### Cancer

The entire RF-EMR spectrum (including AM/FM range radio waves, and microwaves including 5G) was classified by the WHO's International Agency for Research on Cancer (IARC) as a Group 2B Possible Carcinogen (2011). The US National Toxicology Program has recently provided clear evidence of carcinogenicity and DNA damage associated with exposure to RF-EMR (National Toxicology Program, 2018; Smith-Roe et al., 2019). The IARC (2019) has recently announced that the effects of RF-EMR need to be reevaluated with high priority.

### Other adverse health conditions

Thousands of scientific studies have been conducted over the decades which show biological/health effects of RF-EMR. ORSAA researchers have used the database capabilities to classify bio-effects from RF-EMR exposures into various *effects* categories such as cardiovascular effects and immune effects. The health effects categories that can be found in the ORSAA database are shown in the table below, which indicates the number of papers showing effects in each category. The results from the database are described in Leach, Weller, and Redmayne (2018).

Find Search Summary Totals					
Peer Reviewed Studies Showing Biological Effects		Number of records used : <b>2165</b> of <b>3448</b>			
Auditory Dysfunction / Hearing loss / Tinnitus	34	Apoptosis (Programmed Cell Death)	95	Brain Tumours	48
Blood Brain Barrier Permeability Changes	15	Breast Cancer	6	Cellular Stress	59
Brain Development / Neuro Degeneration	52	Biochemical Changes	189	EEG changes / Brain Waves	108
Neuro Behavioural Effect / Cognitive Effects	186	Cell Irregularities/ Damage/ Morphological Changes	186	Effects on Mitochondria	40
Calcium Influx / Efflux	20	Fatigue	37	Altered Enzyme Activity / Protein Levels / Protein Damage	361
Circadian Rhythm Disruption	13	Altered Gene Expression	146	Headaches/Migraines	67
DNA Damage / Mutagenic / Genotoxic	149	Altered Glucose Level / Glucose Metabolism	19	Inflammation	23
Endocrine / Hormone Effects	68	Cardiovascular/Vascular Effects	62	Hepatic Effects (Liver)	20
Miscarriage / Spontaneous Abortion / Foetus Resorption	3	Immune System Effects	65	Impaired / Reduced Healing/ Bone Density Changes	6
Memory Impairment	55	Oxidative Stress / ROS/ Free Radicals	246	Speech Impairment	4
Sperm / Testicular Effects	93	Sleep Effects	61	Haematological Effects	49
Tumour Promotion	38	Neurotransmitter Effects	32	Synergistic/Combinative Effects	55
Thyroid Effects	14	Visual Disturbances/ Ocular Effects	40	Autism	8
Leukemia	3	Parotid Gland Malignancy	4	Neoplasia/ Hyperplasia (Abnormal Tissue Growth)	5
Depression	23	Induced Adaptive Response	49	Dizziness / Vertigo / Vestibular Effects	23

  May have a role in disease pathway/ well-being
   A known cause in disease
 Continue

There are a large number of papers showing potential harm as a result of direct cell damage caused by oxidative stress, a pathological phenomenon which is involved in many chronic diseases such as cancer, heart disease, diabetes and neurodegenerative diseases including Alzheimer's disease as well as mental illnesses. Furthermore, oxidative stress provides a clear mechanism for how existing mobile technologies can cause harm to health, which lays to waste the claims that no scientific mechanism has been found. For example, *RF-induced genotoxicity is now irrefutable and one underlying mechanism is evidently oxidative stress.*

The papers in the main database categories reveal the following major health effects from exposures to RFEMR:

- neurodevelopmental disorders in children
- neurodegenerative diseases in adults such as dementia, multiple sclerosis, Parkinson's disease
- neuropsychiatric/neuro-behavioural problems including memory problems, anxiety, depression, insomnia, and fatigue.
- lowered fertility and serious damaging effects on reproductive tissue and sperm

- immune diseases/disorders such as allergies, atopic dermatitis, and autoimmune diseases
- metabolic diseases arising out of sustained disruption to basic cellular functions such as mitochondrial dysfunction.

This set of biological and psychological conditions mirrors the current epidemic of chronic illnesses that has been growing in the last couple of decades in the developed world. While there are other contributors to the environmental toxic burden, exposures to man-made EMR/EMF have increased exponentially due to the rapid expansion of wireless technology. This makes RF-EMR a likely causal factor in the marked decline in health occurring in the Western world (eg. Blue Cross Blue Shield, 2019).

## Conclusion

This essay discusses issues about why or how things are formed or created, and in doing so questions our worldly, relational notions. In many respects, scientific thinking is about the relationship between entities (eg. objects, systems, etc.) or things that have properties because this is what we experience in life. It is experiences that formulate human based laws or models in biology, economics, and physics, and based on observations about interactions between entities. This process is a product of consciousness formed by the tangled and richly interwoven interactions between the observed world and thought processes. However, does nature work with a different set of notions?

The big questions in science remain as a mystery, and the answers will only get closer when we unlock the domain of everyday experiences and broaden thinking beyond the old metaphysical prejudices of current scientific laws, models, and beliefs. That is, we need to modify our prejudices (*products of the mind*) to align with what we observe in nature.

While this essay does not fully answer questions below, the discussion does highlight the role of relational and subtle energies in radioactive and biological transmutations, as part of nature's processes:

- How was the universe formed and hence the Earth?
- How was water formed in the Earth and how does it continue to produce?
- How are minerals and gemstones created in then Earth?
- How does water and DNA receive, store, and transmit information?

It can be assumed that nature has a **life-force energy capacity to create and transform energies into matter or entities**. In this respect, **nature is the phenomena of the physical and non-physical world collectively, including subtle energies, plants, animals, the landscape, and other features and products of the earth**. This includes the energy forces that cause and regulate the phenomena (mystery or wonder) of the world, or what we call Mother Nature.

The entities of nature are relational and can interact (communicate) under certain conditions or circumstances. For example, we already know that plants can communicate, and this capacity is described in the book *The Secret Life of Plants*, by *Christopher Bird and Peter Tomkins*. Perhaps it is ***the geometry of all matter and life forms*** that enables relational, and energetic interactions to take place in nature. Plants can also communicate with mammals, including humans. Perhaps, we should try to think like plants rather than *anthropomorphise* them to entities without consciousness. That is, nature is conscious and everything that makes up nature has orders of consciousness, where water has a level of consciousness higher than microbes, followed by plants animals and humans (as the lowest form of consciousness). In nature, water is perpetual, does not decay and has attributes of awareness (consciousness) that defies the norms of science (eg. its ability to vortex). Human molecules are 99.9% water and yet we decay to the point of death and have a level of awareness (consciousness) that is mundane compared to water, microbes, plants, and animals.

Therefore, as humans we should be careful not to *anthropomorphise* observations of entities into scientific laws, and system models, because **nature will inevitably violate human beliefs.**

