Quantum Biology 3: Queer Water

Readers Summary

1. How does water appear different than your current perception of it?
2. Are there different kinds of water?
3. Is water really a mixture of proton types and not homogenous?
4. How do these different waters act in us?
5. Why does sickness always come with a desire or thirst for water?

I mentioned in the previous blogs I became interested in how water worked as a semiconductor in humans after looking at life forms under polarized light microscopes. I got the idea to try this because these are microscopes that geologist use to look at rock crystals and liquid crystals. Since water acts like a liquid crystal structure I thought this might be a congruent idea.

When you see how the water looks in a living system is is just an amazing kaleidoscope of all the colors one can imagine. When I saw it I realized that all the micromolecules in any living system had to be embedded in this water crystal to work. This is why 71% of the human body is pure water weight. It also shows you how all the macromolecules in a living cell create can work in complete unison or "coherence" when they are embedded in water.

Most people know that enzymes carry out the chemical reactions in cells. The can speed up chemical reaction times by a factor of 10 to the 10th power up until 10 to the 23rd power. Water is the quintessential quantum enzyme in human biochemistry. Its actions are central to all the actions of quantum molecular machines found in us as I showed you in EMF 8.

Here you saw that interfacial water in Schwann cells was directly responsible for making the piezoelectric current to form in perineural tissues to innervate the periosteum and lay down bone or resorb bone. The key point for you all to know is that thermodynamically, water enables the organism to

function in a zero entropy system as I laid out in quantum biology 1.

Many people still do not understand that when an organism is in a zero entropy state, it implies it's cellular water is no longer functioning as regular 'bulk water' from your sink, but as quantum coherent water that allows for 100% energy efficiency. When water is coherent, it has the ability to function as a wave or particle form to transmit its energy and it is can become entangled with other organs and other life forms in this state.

A coherent activity state implies cohesiveness from the macroscopic world we all know all the way down to the subatomic zone where the unusual properties matter exist that many cannot seem to fathom. It is where the impossible becomes your new reality.

When water is in coherence with Schumann in a living cell, it means 70% of its liquid crystals allow for amazing multiplicities of action to occur. Water is the means, medium and the message of how energy provides all things living their life. The best way to think of water is the fourth dimension of matter between a liquid and a solid. The reason for this is water's special chemistry. Because of hydrogen bonding and its special electrical dipole interactions, it can form long-range orientational order by forming long thin molecules together. We call this molecular anisotropy.

Measuring physical properties of isotropic liquids, such as water or most oils can be done in a straightforward fashion. Their viscosities and densities, for example, have unique values under a given set of conditions. With anisotropic fluids, like liquid crystals, the viscosity, for instance, will not only depend upon temperature, concentration, and most of the physical states they can exist in, but also upon the direction of observation, the degree of anisotropy, the source of anisotropy, and so forth. This added degree of complexity **complicates our ability to define the state of the material** at which the measurements are made and generally necessitates the use of more sophisticated measurement strategies or techniques. Today, biophysicists are beginning to measure water's molecular anisotropy carefully because of how it interacts with the Schumann resonance to create the quantum jazz that life is built upon.

No liquids have some of these unique properties except water, and this is what makes it a vital ingredient to all life.

The Chemistry of water that makes it special

When you look at the chemical formula for water, H_2O, compared to its neighbors on the periodic table water's abilities really make it stick out for the astute observer. Compounds that bind with hydrogen are all called hydrides. All hydrides in the first in the first row of the periodic table of elements all are all gases at temperatures above 20 degrees C, except water. When we consider their boiling points water and hydrogen fluoride stick out. All boil well below the freezing point of water at 0 degree C. Moreover, when you move up Group 6a hydrides from Tellurium to Sulfur their boiling points progressively decrease. Water's increases. Using extrapolation of its neighbor's boiling points, water should boil at 75

degrees C instead of 100 degrees C. Here is another shocker, **water should be a gas at ordinary temperatures and pressures and not a liquid using the chemistry of its neighbors as a guide, but instead, it is a liquid.**

Water as a 'queer' liquid

When water is a liquid it acts in a quite bizarre fashion too. Water frozen into a solid as ice, floats on the cold liquid. None of the other hydrides do this. When ice melts its volume also does not match its liquid form. Ice expands its volumes from its liquid state and this allows it to break solid stone when it has trapped water in it to cause fractures. This means warm water shrinks more than we expect as well. Because of this unusual effect, it means that cold liquid water is denser than when it is in its solid ice form! This is exactly opposite of what should happen when one considers the chemistry of what happens when other solids become liquids. They become denser as a solid than their liquid state because the molecules are more densely packed in this state of matter. This is good news for shellfish and seafood because water beneath ice remains liquid and supercool and dense so they can survive winter conditions on the surface. This is precisely why astrobiologists think life could be on Saturn's moon Titan.

Moreover, this is why **supercooled water** you learned about in the EMF Rx, is ideal for proton superconduction. The cold dense water column (pelagic) is also where the ideal fish from the Epi-Paleo Rx is usually found as well. This is precisely why I call these fish more electron dense because the density and coldness of water increase current flows in semiconduction. It also affects proton chemistry. In normal ionic currents colder temperature slow conduction and this is why the ionic gradients that the Mg/ATPase use are generally expendable when the animal is in a state of coherence with its interfacial water.

When supercooled water is heated, it does not expand as expected either!!! **Instead, it shrinks**, until a maximum density is reached around 4 degrees C. When it is placed under pressure, both the melting point and the maximum density point of water ***shift*** to even lower temperatures than would be expected. When chemists examine ordinary liquids, however, higher pressures promote freezing to higher temperatures! Can this physical property be important for something in the blood plasma?

What other magic does water contain? Water becomes less compressible with an increasing temperature, reaching its maximum at 46.5 degrees C. Warmer liquids tend to be more compressible in this situation and this is why they are used in hydraulic jacks. Warmer water also tends to favor hydrogen bonding with H^+ isoforms. With water, as the pressures are raised even higher this anomalous temperature/pressure/volume property completely disappears experimentally. Might this play a big role in the human body?

At an ordinary temperature below 35 degrees C, increasing the pressure actually lowers the viscosity of water which is completely the opposite of what occurs with other liquids. This becomes very important in how water is able to easily rehydrate the carbon nanotubes you learned about earlier in

the series. It is also why water easily flows against gravity in trees, plants, and in your lower extremities. It allows for unusual vortices to form that make going against gravity on Earth an easy occurrence. Vortices and implosion of water in nanotubes can do amazing counterintuitive things. Implosion technology in water makes this possible. These observations were first made based on the work of Viktor Schauberger.

What about the bonding of water?

Water is best described as an electric dipole in which its positive and negative charges are separated. Oxygen contains its negative charge and the two hydrogen atoms have its positive charge. Hydrogen in water is not homogeneous on Earth. Dipoles can stack together in dipole interactions with alternating positive and negative poles next to one another. They also can interact electrostatically with other charged ions and other dipoles that are dissolved in water. Not all forms of hydrogen do this.

Chemistry Geeks: Water is most famous for forming hydrogen bonds with other water molecules and with other ions dissolved in it. A hydrogen bond consists of a hydrogen shared between two electronegative atoms like oxygen or sulfur. The compound that donates the hydrogen to the chemical reaction is the hydrogen donor, and the acceptor atoms are the hydrogen acceptor. Water is unique because it can be both an acceptor and a donor of hydrogen provided that hydrogen can move easily. Not all hydrogen can act this way. In fact, it can donate two hydrogens to reactions.

When hydrogen has an alternative spin it makes the water molecule take on the tetrahedral structure in its frozen form linked in a crystalline hexagonal array in crystal ice. Normally different isotopic forms of compounds behave very similarly to each other. However, nuclear quantum effects in the water molecule are significant and differ between the isotopic forms. The heavier forms of water (D_2O where D = deuterium (D), 2.0141 g $\times$ mol^{-1}; and T $_2$O where T = tritium, 3.0160 g $\times$ mol^{-1}) form stronger hydrogen bonds than light water (H_2O where H = protium, 1.0078 g mol^{-1}). As bond strength varies this means the heavier versions of hydrogen vibrate less than expected. This is true in the matrix mitochondria or in the reactions that control the circadian mechanisms. Hence, D and T are more ordered than normal water, as shown by their greater molar volumes, are more tetrahedral and have more hydrogen bonds [1485]. This causes many of their properties (such as the viscosity, self-diffusion coefficient, protein solubility, toxicity [a] and biological activity [2265] including the effect on the frequency of circadian oscillations. This means deuterium can affect circadian mechanisms.

The dipole nature and propensity for hydrogen bonding are why water has an unusually high dielectric constant of -78 at room temperature. This makes it the most polar solvent in all of chemistry and biology! This fact alone should have gotten biochemists attention that intracellular water is really critical but it has not.

Physics Geeks: Why is this a big deal? In QED and semiconduction, anything with this high a dielectric constant becomes easily polarized by an electric field. This is why the quantum magic can happen with water. The dielectric constant is also known as a relative static permittivity ability. This is a measure of the extent of which it concentrates electrostatic lines of flux relative to a vacuum. This is very important in semiconduction science for a coherent flow of current. The hydrogen bonds serve to align the dipoles, and at the same time, pulling away positive and negative charges within the molecule, and this acts to enhance the molecular polarization in liquid water.

Non Geeks: Because of these abilities collectively it makes water extremely versatile in creating supramolecular structures in water. This is why water can be thought of as structured and unstructured. We call unstructured water bulk water. This has been extensively studied by Dr. Phillipa Wiggins. To give you an analogy of the variety of the supra structures in water let us consider ice. In nature, we see snowflakes, icicles, and packed ice in snow caps, in glaciers, and in icebergs. Snowflakes are so structured that each one is unique in its own right. When water is studied in the lab there are 15 known crystalline forms of ice that can appear under different temperatures and pressures. Some are amorphous noncrystalline forms of ices and there is glass like ices that are transparent but non-crystalline too.

The most impressive forms of water, however, for life remains it liquid crystalline abilities to superconduct electrons and protons in nanotubes and across cell membranes. Liquid water has no color except when the light is shown through it. This is why the sky is blue. Scattering of light is inversely proportional to the fourth route of the wavelength through the water vapor of the atmosphere to make the sky gorgeous blue. This is also why the oceans can be emerald green can be why rainbows exist via the prism effect of light. Water has no shape, no sound, no movement, little resistance. It is widely acknowledged now that the hydrogen-bonded network of liquid water is what gives it its unique chemistry.

Beyond that agreement, however, there is no agreement over how the exact molecular bonding is linked in tetrahedral ice like bonds or how molecules interact with locally with its nearest neighboring molecules or how they can affect molecules on a more macroscopic or global scale.

What is crystal clear today based upon the work of many scientists that there is substantial evidence for the cooperative interactions between water molecules that result in remarkable long-range coherence in liquid water under ordinary conditions found on Earth and in the biology of life.

A sick body and brain will begin to crave water and its thirst will increase across most diseases for a good reason. Illness means a lack of energy and water is the number one option for energy transfer in most living things. The main issue is not all water is homogenous as you are beginning to find out. Watch the world for signs that our species is really ill when its choices begin to change without a good biologic reason why it is changing. I fully expect government and medical associations blame the link to slicker marketing but I think readers of this blog may know differently. When our

species moves toward the “right water” for its drink of choice, it may be a clinical symptom of a bigger biological issue underway worldwide.

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