

PERSPECTIVES ON THE CONNECTION BETWEEN WATER AND LIFE FORCE

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ABSTRACT

Historically, water has been associated with the life force and the unseen realm, within which it purportedly animates and gives rise to the observable world. This unseen realm is often referred to as etheric, akashic, extra dimensional, or zero-point. Sacred traditions and geometries characterize water as mediating between the seen and unseen realms and symbolizing the movement of the life force itself. Water's role as a molecular-scale mediator between different forms of matter and between matter and energies is recognized by today's science; however, the inability to define or measure an etheric realm has relegated the connection between water and life force to esoteric theories. Recent discoveries of unseen matter and forces in our universe have prompted a revised view of Nature's hierarchical structures and the role of water within them. Water is sometimes represented as a dynamic matrix, not unlike the complex networks identified by systems theorists as both transmitting information and responding to the environment. Could water actually serve as the observable counterpart of the unobservable life force?

BACKGROUND

Perhaps the most puzzling of all water's bizarre attributes is its association with the so-called *etheric* or *akashic* portion of the manifested plane. The life force (known as qi, chi, prana, etc.) has been either hypothesized or interpreted to originate within or emanate from this etheric realm. The association between water and the life force is not simply one appearing in arcane myths and fanciful legends, but one that has been raised throughout history. Although the etheric realm presumably affects matter, forces, and cause-and-effect relationships in our observable world, we are unable to detect its presence. What exactly is the etheric realm? From a scientific perspective, this question simply cannot be answered because, as yet, there is no accepted description of the aether. There are, however, indications that the particles and forces currently recognized by science constitute only a fraction of those in our universe.

Astrophysicists have recently posited that there is a mysterious force, as well as an unknown type of matter, that affects the gravity-related phenomena of universal expansion and galactic rotation. Additionally, scientists have known for some time that a vacuum cooled to absolute zero (-273°C) retains some form of energy, which is referred to as *zero-point*. While scientists struggle with these

seemingly contradictory observations, theoretical physicists have proposed that the fundamental forces and particles of our universe are actually a result of vibrational differences among tiny strands of energy known as *strings*, which are theorized to constitute the most fundamental constituents of matter and forces. String theory, as well as the related M-theory, also posits that our universe must be composed of more spatial dimensions than we are able to perceive in our everyday world. That is to say, the extra dimensions are folded or rolled-up into the familiar three spatial dimensions that we recognize as our observable world. Zero-point energies, dark matter, short-lived particles, mysterious forces, extra spatial dimensions, and unique surfaces (i.e., so-called *branes* to which strings are attached) have been identified by some modern philosophers and researchers as representing the ancient aether, or akasha, and its innate life force.

I will refer to various applications of recent scientific theories throughout this paper. In doing so, it should be understood that such applications have not been embraced by the contemporary scientific community and there is no scientific evidence relating them to an etheric realm (particularly to one defined by ancient descriptions and unconventional research studies). By the same token, it should be noted that the *luminiferous aether*, which was proposed and later refuted by nineteenth-century physicists, is not synonymous with the aether in which the life force is understood to reside.¹ Luminiferous aether was supposedly a gas or gaslike substance found exclusively beyond Earth's atmosphere, whereas most ancient descriptions of aether neither limit it to outer space nor specify that it consists of ordinary matter (i.e., a gas). Many translations suggest the ancient aether was not of the gross or observable world and, while sometimes referred to as a substance, was routinely identified as a force, energy, field, and dimension.

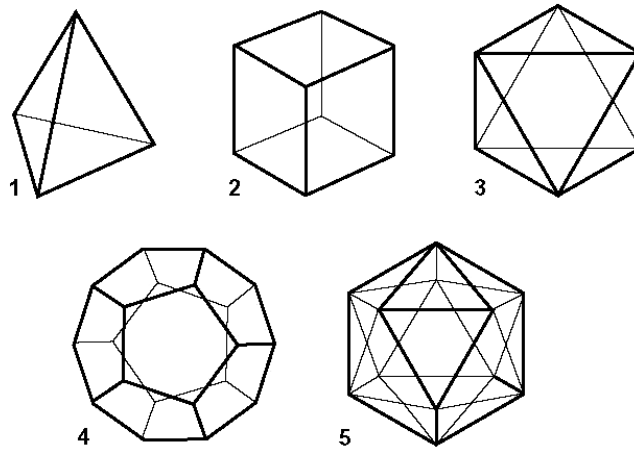
So, what is the relationship between aether and water? Those naturalists and philosophers who delve into the highly controversial relationship between water and aether seem to gravitate toward explanations involving either mediation or transduction. In other words, water is hypothesized to somehow bridge the very different energies of the seen and unseen realms. The mechanisms by which water performs this feat have never been elucidated; however, most hypotheses implicate the processes of sympathetic vibration and resonance. In other words, water's vibrational repertoire is considered vast enough to act as an energy and information transducer. This presentation does not purport to explain or define a precise relationship between water and life force, but instead to suggest some interesting scientific and nonscientific views (e.g., those from ancient tradition, sacred geometry, esoteric research, natural science, information and systems theories) that may be relevant to hypothesized interactions between the two. The relationship among various realms, planes, and worlds that will be referred to in this paper are outlined in the Appendix (see final page).

ELEMENTS, GEOMETRIES, AND PARTICLES

During the fifth century B.C., the philosopher Empedocles proposed that all matter in the universe was composed of differing combinations of four original substances and two moving forces. Empedocles referred to these four substances

as the Elements of *fire*, *air*, *water*, and *earth*, and he identified *love* and *strife* as the moving forces. These two moving forces essentially energize the combining or dissociating of Elements, such that matter can be neither created without love nor uncreated (destroyed) without its opposite moving force of strife. So stated, this principle of the four Elements has served as a fundamental understanding of Nature for an astonishing number of ancient cultures around the globe (e.g., Greek, Aztec, Hawaiian). Whereas the mix of Elements differed slightly among some cultures (e.g., the Chinese recognized wood and metal in lieu of air), all recognized water as a fundamental constituent of our world. The four Elements and the mysterious etheric substance from which they were understood to have emerged were eventually associated with a unique set of three-dimensional geometries known as the Platonic solids, which appear in Plato's *Timaeus* and are shown in Figure 1.

FIGURE 1. The five regular Platonic solids are the only angular three-dimensional geometries composed entirely of regular polygons that, when spun about their center vertex, create a sphere. The *faces* constitute the sides or exterior panels of the Platonic solids and are represented by a triangle, square, or pentagon. The *edges* are the straight lines that outline each of the faces, whereas the *vertices* are the points where two or more edges converge. The solids include a tetrahedron (1), a cube (2), an octahedron (3), a dodecahedron (4), and an icosahedron (5). Reprinted from *Universal Water*.²



These regular solids are correctly understood in an extended sense, whereby spinning them about the center vertex creates a circumscribed sphere. Sacred geometry associates the sphere with the infinite and undifferentiated essence of Spirit and, as such, the Platonic solids are the only angular three-dimensional geometries that form a perfect interface with the primordial chaos. It is through these solids that our material world (as angular geometries) was believed to connect to the so-called Absolute (as a sphere), representing the unmanifested source of a manifested plane that is composed of seen and unseen realms. The icosahedron and dodecahedron (related to the renowned *golden ratio*) were considered to symbolize transcendent principles and to span the observable and unobservable worlds, whereas the cube and octahedron (related to the number 2

and its square root) were considered to represent crystallized matter within the observable world.³ The tetrahedron is self-reciprocating (i.e., symbolizing the *yin-yang* principle as two interlocked tetrahedra), the most fundamental of the five solids, and the most basic molecular geometry of water.

In the manifested plane, water symbolized the perceptible counterpart and mediator of the imperceptible aether. Because the observable world (represented by the cube) supposedly emerged from the aether via the mediator of water, it follows that the icosahedron and dodecahedron are mathematically related to the cube according to the golden ratio. The golden ratio is an irrational number that was considered by many ancient cultures to serve as the primary mathematical relationship underlying the material world. Also known as *phi*, the golden ratio is present in Nature and many man-made creations (e.g., flora, fauna, architecture, music), as well as in all angular geometries possessing five-fold symmetry (e.g., dodecahedra and icosahedra). An intimate relationship between aether and water can also be found in the ancient Hawaiian tradition, wherein the word for water (*wai*) was commonly substituted for that of the life force (*mana*) when describing the movement of life force in the unseen realm.⁴ Whether represented by a deity, Element, geometry, or life-sustaining force, water has been identified in diverse cultures as both a key player in creation and, through its interaction with other forces and matter in the seen and unseen realms, an animator and principal constituent of worldly forms.

TABLE 1: The four fundamental Elements and aether have been used to represent seen and unseen realms of the manifested plane. The Platonic solids were interpreted from ancient traditions, whereas the metaphoric roles have their roots in modern and ancient perceptions. In addition to solid, liquid, and gaseous states of matter, science recognizes matter consisting of charged atomic particles (plasma) and of an unknown composition (dark). The forces of physics have now been narrowed to include those of electromagnetism, the atomic nucleus, and gravity. Whereas the former two have been or will soon be unified into a single theory, the addition of gravity has proven problematic inasmuch as it seems to require the presence of additional, but as yet unobservable, spatial dimensions in our universe. Adapted from *Altered Perceptions*.¹

	FIRE	EARTH	AIR	WATER	AETHER
<i>Platonic solids</i>	Tetra-hedron	Cube	Octa-hedron	Icosa-hedron	Dodeca-hedron
<i>States of matter</i>	Plasma	Solid	Gaseous	Liquid	Dark
<i>Metaphoric roles</i>	Transform	Nurture	Refine	Mediate	Create
<i>Forces of physics</i>	Electro-magnetism	Strong Nuclear	Weak Nuclear	Gravity	None (A-field*)

* The A-field (where "A" designates aether or akasha) is theorized to be one of omnipresent information and does not correspond to any of the currently recognized forces of physics.

The ancient Elements are certainly not fundamental in a physical sense, but then neither are atoms nor protons nor quarks—all the “basic” particles simply represent patterns of energy. These are the patterns that create the diversity of the material world and have been characterized as infinite in their number and

scale. Although sometimes interpreted as symbols of currently recognized forces and states of matter (see Table 1), the Elements are believed by some historians to represent more than just gross aspects of the manifested plane and, instead, to symbolize universal principles or intelligence.⁵ As such, the Elements are often linked to patterns of energies (as the essence of particles and forces) and to a type of omnipresent information that is believed to animate the observable world.

It is important to reiterate that the Elements simply serve as symbols of the various forces, roles, and physical states identified in Table 1. For example, water represents the liquid phase (not just liquid water) and the mediation of many different processes in our world. Similarly, water is obviously not responsible for gravity, but rather best symbolizes some aspect or role of the gravitational force. According to quantum mechanics, gravity is associated with an elusive particle known as a *graviton*, which theorists predict both connects and freely moves between our observable world and an unobservable, but manifested, world of other branes, strings, and spatial dimensions.⁶ Gravity is the one force that theoretically interacts with both worlds, just as water is the one Element that purportedly mediates the flow of information between these worlds. Whereas gravitons have yet to be detected, it is interesting to note that the interaction of particles (comprising both matter and forces) is how information is believed to flow between worlds or realms. Many scientists believe that information, rather than matter or forces, is fundamental to our universe (i.e., physical properties are a result of information transfer) and that Nature is continuously learning about itself through its interacting particles and forces. Journalist Charles Seife notes that if scientists attempt to shield anything from detection, Nature always finds a way of gathering information (e.g., by winking particles in and out of existence) even in the deepest vacuum at a temperature of absolute zero.⁷

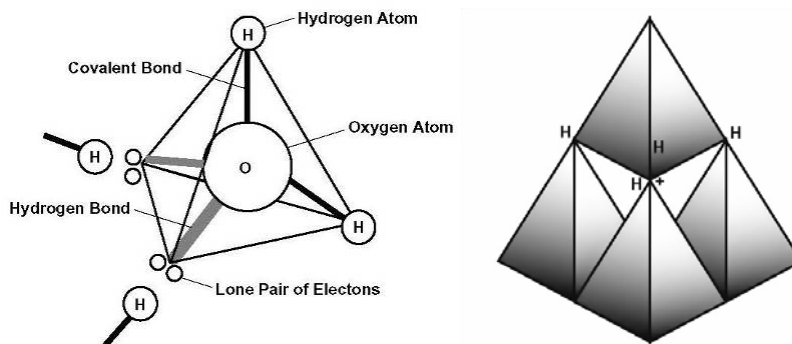
THE WATER NETWORK

Water is certainly not composed of gravitons and its interaction with ordinary matter seems to be governed by classical, rather than quantum, physics. So, how might water fulfill its role as a mediator of information between the etheric and observable worlds? This is one of many enigmatic questions regarding water that philosophers and naturalists have pondered for decades. There is no universal consensus; however, a key is believed to lie within water's molecular network.

Perhaps the late twentieth century's most startling discovery about liquid water is that it consists of a vast interconnected network, rather than just a random collection of agitated molecules. Individual water molecules serve as the network's *components*, which constitute the building blocks for water's primary network (as contrasted with secondary or tertiary networks that could include clusters or groups of clusters). The components of water's molecular network are linked to one another via magnetic-type connections known as *hydrogen bonds*. The network is described as highly dynamic inasmuch as the linkages between components are constantly exchanged. In solid water (ice), each water molecule bonds with all four of its nearest neighbors in forming a perfect tetrahedron (see Figure 2). As ice melts into liquid water, 10% to 15% of the bonds connecting

neighboring water molecules are broken at any instant (thus distorting the tetrahedron), while the remaining bonds transition to an ultradynamic state whereby they switch as rapidly as a trillion times per second! Hydrogen bonds are broken only for an instant, permitting water molecules the opportunity to alter their orientation to one another. This frantic switching of linkages permits the water network to flow and to behave as a liquid even though it retains most of the molecular geometry of a solid.

FIGURE 2. The schematic on the left represents the simplest unit of water's hydrogen bonded network. The large oxygen atom serves as the center vertex of a tetrahedron, while the smaller hydrogen atoms serve as its four outer vertices. Two of the hydrogen atoms are covalently bonded to the oxygen atom, thus composing the individual water molecules (H_2O). Water molecules are hydrogen-bonded to each other via two pairs of electrons associated with each oxygen atom. These electron pairs attract two hydrogen atoms (each donated by a different neighboring water molecule) in forming a tetrahedron composed of one oxygen atom and four hydrogen atoms. Covalent bonds (thick black lines) create a water molecule by linking atoms together, whereas hydrogen bonds (thick gray lines) create a water network by linking molecules together. The schematic on the right is composed of four hydrogen-bonded water molecules. Linking water molecules together via different geometric arrangements creates a wide variety of so-called water clusters. Reprinted from *Universal Water*.²



While water's ever-changing molecular network may not sound magical, its dynamics are believed to be responsible for most of its unusual properties. Moreover, the resistance of liquid water to alter its "ice-like" network may permit it to display a very unusual and highly controversial kind of cognition. *Systems theorists* working in many different fields have postulated that relatively simple dynamic networks can account for a wide range of complex behaviors. They maintain that interconnected components express so-called cognitive properties (e.g., varying responses to differing stimuli), which emerge from a set of rules for switching network connections—even if those rules are applied at an arbitrary initial state.⁸ In other words, the complex adaptive behaviors of an entire system (i.e., any entity composed of many similar components) may simply relate to the way in which connections between individual components are exchanged among each other (see Table 2). Could water's magic relate to a network that exchanges connections (hydrogen bonds) among its components (water molecules)?

Scientists have long modeled liquid water as a space-filling network of water molecules in which all potential hydrogen bonds are viewed as either unbroken or broken.^{9,10} Unfortunately, the shuffling (i.e., breaking and forming) of hydrogen

bonds within water’s network is so rapid and complex that scientists are unable to decipher the rules governing the process. This inability does not imply that the switching rules are haphazard—only that scientists are overwhelmed by water’s dynamism, which has been traced to quantum events known as zero-point vibrations. These vibrations govern the exchange of water’s hydrogen bonds and are impossible to predict due to the uncertainty inherent in quantum events. Unlike the dynamics of common chemical bonds (e.g., the vibrations of water’s covalent bonds) that are governed by the familiar laws of motion and heat, the dynamics of water’s hydrogen bonds are propelled by an unknown energy from seemingly empty space that persists even at a temperature of absolute zero.¹¹ Emanating well beyond the most fundamental level of Nature’s hierarchy that scientists can currently observe, water’s network dynamics appear truly etheric.

TABLE 2. Hydrogen bond dynamics for various physical states and locations of water are contrasted with the vibrations of covalent bonds that hold an individual water molecule together. Hydrogen bond dynamics span a factor of about one quintillion and are presented in the units of “beats per second,” which correspond to the frequency of exchanges or motions. The vibrational range of water’s network have led some theorists to posit that it mediates between different forms of matter, between matter and energy, and between the observable and unobservable realms. Adapted from *Altered Perceptions*.¹

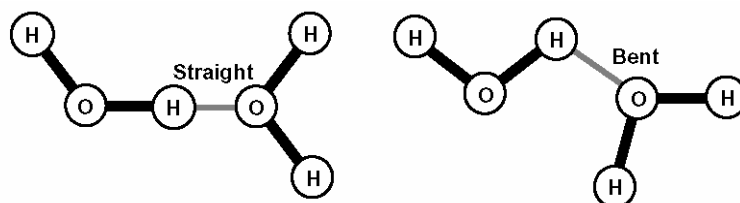
LOCATION OR STATE OF WATER MOLECULES	APPROXIMATE TIME BETWEEN HYDROGEN BOND EXCHANGES	RHYTHM (beats per second)
<i>Gas-liquid interfaces</i>	hours to one day	thousandths
<i>Crystalline ices</i>	minutes to hours	hundredths
<i>Components of biomolecules</i>	hundredths to thousandths of a second	hundreds to thousands
<i>Various hydration envelopes</i>	billionths to millionths of a second	millions to billions
<i>Bulk liquid</i>	trillionths of a second	trillions
<i>Covalent bonds</i>		quadrillions

CHARACTERISTICS OF NETWORKS

Water’s ubiquitous presence and uncanny gift of transforming energy permit it to mediate myriad planetary and cosmic events, whereas its ability to transmit and perhaps even “rhythmically merge” energies is a consequence of the way that individual molecules self-organize into networks. Researchers who work at the fringes of postmodern science hypothesize that water’s vast and ever-changing network may serve as a kind of massive information system—not unlike the binary systems that characterize today’s computers. This hypothesis is also based on the dual nature of a hydrogen bond, resulting from the position of a hydrogen atom between the two oxygen atoms (see Figure 3). Depending on the relative orientation of two adjacent water molecules, the three atoms can assume either a straight or a bent spatial arrangement. The former (straight) arrangement has been theorized to create a stronger bond than does the latter (bent) one, perhaps

explaining which bonds are preferentially broken during the heating and phase changes of water.¹² Could water's network function as a ternary system (i.e., STRAIGHT-BENT-OFF) in lieu of, or in addition to, a binary one (i.e., ON-OFF)? Computer models suggest that the predictability of hydrogen bond arrangements (also known as water's *order*) is actually more fundamental to water's anomalous behavior and physical properties than are its so-called structures and clusters,¹³ which are determined by water's order and described by the relative positioning of molecular assemblages within its network. Water's order is an indication of the rotational freedom of its individual molecules and the extent to which a pair of them assumes one, rather than switches between both, of the arrangements.

FIGURE 3. A hydrogen bond's arrangement, or *directionality*, is a function of the two positions that a hydrogen atom can assume between the oxygen atoms of neighboring molecules. The oxygen atom of one molecule can lay along a straight or a bent line (the extent of bending may vary) with the oxygen atom of a neighboring molecule, depending on their respective orientations. This applies to all hydrogen bonds, not just to those connecting water molecules. Reprinted from *Universal Water*.²

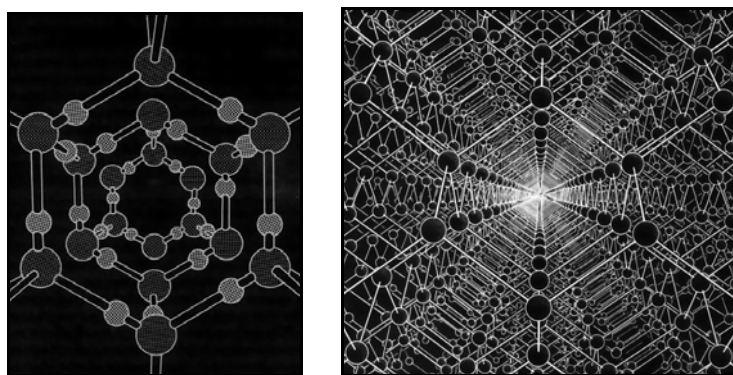


Whereas the question of whether water is primarily an information network has not been answered, much of what is postulated about its vast network has been extrapolated from brief glimpses and then mathematically modeled to produce a more complete description (see Figure 4). An interesting analogy exists between water's network and a theme of many ancient creational myths—namely that structured forms are created from unstructured sources. In the case of liquid water's network, the bulk fraction is often characterized as unstructured because the hydrogen bonds between its adjacent water molecules are frenetically and unpredictably switched. Oddly enough, distinct clusters of water molecules are produced from this bulk fraction by arranging themselves into predictable three-dimensional structures that switch their connections at a more leisurely pace. Hence, structured water clusters seemingly emerge from a boundless sea of bulk water, just as manifested forms were believed by many ancient peoples to emerge from the infinite possibilities of the Absolute (i.e., unmanifested plane).

The analogy between the creational medium and water (as characterized by a structural dichotomy) is even more curious in light of modern, although highly controversial, contentions that water's clustered or structured components are responsible for its designation as "living." Living water was the label given to the substance that was understood by many ancient peoples to serve as a creational mediator between the seen and unseen realms. Hence, the presumed mediator of creation (water) displays within its network a balance between "order" (as dense clusters or highly structured assemblages) and "chaos" (as a bulk fraction of less structured or ever-changing assemblages). The switching of a substance between

states that differ in both order and density or between crystalline and amorphous phases can function to store and retrieve information; however, any relationship between clustered living waters and sacred living waters, which were believed by many ancient peoples to bridge the seen and unseen realms, remains ambiguous.

FIGURE 4. This schematic is believed to resemble the network structure of liquid water; however, scientists have been able to observe only a fraction of the network using current technologies. In view on the left, the large dark spheres representing oxygen atoms are connected to the smaller and lighter-shaded spheres representing hydrogen atoms. Hydrogen atoms are situated along the connecting hydrogen bonds. Water's hydrogen-bonded network is difficult to depict at the scale portrayed on the right; nonetheless, note the seemingly infinite matrix comprised of individual water molecules as hydrogen bonds (white lines) intersect oxygen atoms (black spheres). The network's structural complexity and hydrogen bond dynamics may prove to be the key to water's magic. Reprinted from *Perspectives on Biogeochemistry*.¹⁴



CLUSTERS AND MEMORY

Water's distinctive and bizarre physical properties have puzzled humans for thousands of years. Certainly not the least puzzling of these attributes is the so-called memory of water, which was initially proposed by ancient philosophers and more recently hypothesized by a handful of contemporary scientists and naturalists. What exactly is meant by the term "water's memory?" While there are many ancient references to water and its legendary memory, few address how water is able to access or retain such memory (i.e., the underlying mechanisms and physical processes). Generally, water is understood to acquire information by one of two modes. The first involves its interaction with ordinary matter and forces that, in turn, alter its network patterns or clusters (e.g., density, number, type), whereas the second requires its accessing information from a currently unobservable source (i.e., the A-field) that profoundly influences the observable world. While these two modes of acquiring memory are not mutually exclusive, hypotheses applied to the former are not necessarily applicable to the latter. This section focuses entirely on water's interaction with ordinary matter and forces.

A brief perusal of the Internet will provide an experienced surfer with a litany of aqueous concoctions that are referred as *structured* or *clustered* water. An entire book could be devoted to the various methodologies that produce these

waters and to the observed effects on the people who drink them; however, I will restrict my discussion to some basic tenets. In general, there is an emphasis on increasing the ratio of clustered water to bulk water by exposing the network to “templates” (e.g., proteins, polymers, colloidal minerals) that require water to build specific hydration envelopes around them. These envelopes or clusters are then exposed to forces or fields (e.g., magnetic, electric, vorticity) in order to stabilize them for time intervals longer than those indicated in Table 2. Clusters that no longer contain solutes (e.g., homeopathic solutions) would seem to persist for less than one second; however, the effects of such solutions on living cells reportedly last for months to years. This long-lasting effect has been attributed to everything from silicon-containing compounds that leach from glass containers to the presence of “ice-like” clusters, or *clathrates*, that seem to persist over a range of environmental conditions and are able to sequester and then to expel solutes from their internal cages in response to changing conditions.

The nuances of homeopathy notwithstanding, an overriding objective of most water structuring processes is to create an optimal aqueous solution that is free of life-degrading structures or energies (e.g., those created by pollutants) and that is sufficiently stable to reach the cells, where it permeates the cell’s membrane and is subsequently restructured by biological surfaces and molecules. It should be noted that all water entering biological organisms is ultimately restructured to perform very specific functions; hence, the “outside” structuring is hypothesized to produce a lower *entropy* arrangement of molecules, thus permitting organisms to more effectively utilize water and to more efficiently restructure its network. Clustered water is commonly described as less disordered or random than is bulk water, and this difference in entropy is reportedly measured as subtle changes in water’s physical properties (e.g., cohesion, dielectric constant). Any reduction in network entropy must be accompanied by a transfer of information. And where does the requisite information reside? According to this model, the information resides within the matter, energies, or forces that structure water.

Whereas the notion of water’s retaining memory, which I define as storing information related to its past interactions with the observable world, is highly controversial (at least according to mainstream science), water is recognized as participating in the transfer of information among various forms of matter and between matter and energy. Regrettably, the extent of water’s ability to mediate information transfers is not well understood. Recently, considerable interest has focused on whether water is structured or unstructured (i.e., clustered or bulk); however, these simple designations define a relatively gross parameter. Not only do these designations provide few (if any) details about the molecular geometries of water’s clusters, they provide no information about the orientation of water’s hydrogen bonds that ultimately may be responsible for those clusters.

FIELDS OF AETHER

In addition to recognizable energy, matter, or forces affecting the structure of water (i.e., altering its hydrogen bond network and related physical properties), unconventional research and hypotheses continually suggest that such alterations

are induced by more subtle forms of energy, such as those often associated with thoughts, intentions, and the life force. Contrary to perspectives discussed in the previous section, these kinds of effects on water (if valid) point to a different or additional manner in which water interacts with the manifested plane. That is to say, theorists not only deal with the temporal conundrum of water's memory (i.e., its retaining information transferred from sources that have been removed), they also deal with the spatial conundrum of water's either retaining or transmitting nonlocal information that seems to transcend ordinary matter and forces. Hence, we return to the mysterious relationship between water and the A-field. If the A-field is a storehouse of omnipresent information within the manifested aether, then it should be physical—at least in some form. Yet we appear to be unable to perceive the A-field and its related life force using either our gross or extended senses. Extended senses are gross senses amplified by technology (e.g., scientific instruments). Curiously, there are countless descriptions of people's perceiving the information of the A-field and the energies of the life force using their so-called subtle sensing capabilities.¹

While there may be numerous examples of people's perceiving this field, there are considerably fewer hypotheses that purport to explain how such a field might influence and interact with the observable world. Perhaps the most renowned of the modern researchers who attempted to explain the existence and function of the aether in a technical, if not a scientific, manner was Rudolf Steiner. Moving beyond mystical or metaphysical explanations, Steiner wrote extensively about an etheric component of the physical world (i.e., the aforementioned A-field) that we cannot directly observe, but that interacts with and ultimately influences the matter, forces, and effects we do observe.¹⁵ The vital, but unseen, life-giving and form-shaping processes of the observable world were related to an unrecognized etheric component. Following in Steiner's tradition, naturalist Theodor Schwenk postulated that all organic formation is based upon etheric forces, which in turn receive formative impulses from the spiritual plane.¹⁶ Etheric "forces" utilize the medium of water, which vibrates in resonance with them and permits the passage of formative impulses to the material world. Note that water acts as the mediator between the aether and material world via the mechanism of vibration.

The British biologist Rupert Sheldrake hypothesized that, in addition to the laws of classical science, structure and change in life forms can be traced to fields that control the origin of form.¹⁷ Sheldrake's theory suggests that *morphic fields* control form and occur as a result of similar forms that have existed in the past. Subsequent forms or structures act as attractors for the appropriate fields. While his theory does not deny the roles of matter-derived information (e.g., genetic codes), it does propose fields as nonmaterial regions that influence action at a distance, permitting entities to affect each other even if they are not in physical contact. Sheldrake suggests that morphic fields are informational and contain a built-in memory that is sustained by *resonance*, a process whereby the natural frequencies or rhythms of separate entities are sufficiently similar to transfer information. So, where are these nonlocal fields? Sheldrake suggests they could be conceptualized as another dimension or as a state of the mysterious aether.¹⁸ Is it possible that morphic fields represent distortions in string theory's rolled-up spatial dimensions? Could morphic fields be the source of an etheric code that is

purportedly mediated by living water? Although Sheldrake's theory does not address water's mediation, it does predict that more recent and similar fields exert the greatest influence on forms. This is of interest because the most recent aqueous solutes reportedly exert the greatest influence on water's "memory."

There are several aspects of morphic fields that could apply to water. First, morphic fields provide the information, but not the energy, for change. In other words, the energy required to alter physical forms (in accordance with the fields) must be supplied either by the form itself or by some energy mediator, which may be fulfilled by water. Second, such fields may provide an explanation for water's long-range or nonlocal characteristics. Scientists have observed that molecular interactions mediated through water extend far beyond the limits of hydration envelopes, although how far or by what mechanisms is unknown.¹⁹ Third, there are very few biological forms that are not either dissolved in water or contain water as an integral part of their structure. Could changes in biological life forms be facilitated by water in response to an ever-changing mosaic of morphic fields? Could morphic fields represent the source of an etheric code (as opposed to the genetic code) that many naturalists speculate is activated through water? If so, could water actually play a role in altering the geometry of other physical forms (along with its own) and, consequently, mediating their transition from one set of fields to another? Perhaps not surprisingly, a number of current theories propose that information is stored within and downloaded from unrecognized fields.

FUNCTIONAL COUNTERPARTS

Is water the observable counterpart of the unobservable aether? In other words, does water serve as the mediator of the life force in biological structures? Those who hypothesize that water is involved in disseminating information often choose to look inside water to find the source of the information, just as someone who had never seen a radio might dismantle it in an attempt to find the person whose voice is heard. But water, not unlike the radio, may simply "broadcast" information that is transmitted on the many channels to which it is tuned at the moment. Whereas one can depress the pause button and freeze the information stream on a single image, this is not the same as deciphering the entire message. Water's ability to mediate the flow of information may be as much dependent on its dynamism as on its specific clusters or observable crystals. Does water's large vibrational range (see Table 2) permit it to transpose or translate information between different forms of matter and between the seen and unseen realms? Does water utilize form or geometry to select both the sources and recipients of its information? If so, water does not—and perhaps cannot—store information as much as it constantly accesses and transmits information on different "channels."

The macroscopic behavior of complex networks, such as those described for water, is related not to their static structures, but rather to dynamic interactions between system components (individual molecules) and between the system and its environment (i.e., water and solutes or biological surfaces). These systems must achieve a minimal size before self-organizing behaviors emerge. Estimates for the minimal size of self-organizing molecular systems vary from as few as

several million molecules ($\sim 10^6$) to as many as one *mole* ($\sim 10^{24}$), depending on other properties of the system. If these otherwise arbitrary numbers are applied to water, the liquid volume varies from several milliliters to a fraction of a *cubic micron*, which represents the approximate scale of a biological cell. The patterns and behaviors of self-organizing systems arise solely from relationships between the individual elements of an integrated whole (e.g., the molecules of water's network) and respond to attractors that govern different functions or behaviors.

What roles does the life force play in the observable world, and are those roles limited to biological organisms? While there are countless interpretations of the purposes and roles of life force energies, the consensus seems to be that they are not confined to biological organisms, perhaps explaining why some people claim that everything is alive—even though life is commonly recognized in only a few of its myriad expressions. For purposes of brevity, this presentation will remain focused on water-aether interactions pertaining to biological organisms.

The roles of life force appear to be many and varied; however, there are a few consistent themes. First, life force exists within organisms (e.g., along pathways known as *meridians* in complex organisms), surrounding organisms, and in the “space” between matter. Second, the life force can be sensed, but not measured, and profoundly affects the health, development, and vitality of organisms. Third, the life force interacts with water. In addition to the water-aether relationships already discussed, psychiatrist Wilhelm Reich claimed that *orgone* has the ability to attract water, various researchers at the HeartMath Institute in California have posited that water's physical properties and molecular network can be altered by people's psycho-physiological states or *subtle energy* fields, and photographer Masaru Emoto asserts that human thoughts, words, and music structure water through *Hado*. Evidently, the life force is known by many different names and is believed to interact with water in vastly different ways.

Some of the mechanisms proposed for the water-aether interaction involve tunneling through energy barriers, imprinting energy patterns, transducing zero-point vibrations, merging dissimilar energies within vortices, creating wave forms via fractal geometries, and connecting hierarchical levels of the natural world. Whereas some, all, or none of these processes may be involved, it may be most useful to examine water from the standpoint of structural hierarchies. Nature's complexity is often described as modular or hierarchical, such that the emergence of higher levels of order, function, and even “meaning” result from a degree of organization that is not present in the lower levels.²⁰ By the same token, lower level processes and structures serve to make the higher level ones possible. As a consequence, cause-and-effect relationships that are interpreted solely from one level of Nature's hierarchy are often oversimplified and incomplete.

Applying this hierarchical model to water suggests that no matter how much we study its component molecules or atoms, we cannot understand its function as an extended molecular network (e.g., cellular fluids) or as a constituent of higher-level physical structures (e.g., the global water cycle). Furthermore, we cannot fully understand causality within the atomic or molecular levels because “causes” inherent in the complexity of higher-order layers exert their influence without our realizing it. Table 3 includes a sampling of water's properties, processes, and structures, along with observations or characteristics pertinent to the hierarchical

levels. While entries to the table are admittedly limited and somewhat arbitrary, many of the processes discussed thus far are included.

TABLE 3. Various properties or processes, as well as corresponding observations and theorized hierarchical levels, related to water. Entries followed by a question mark have not been accepted and/or recognized by mainstream science.

PROPERTY OR PROCESS	RELATED OBSERVATIONS	LEVEL
<i>Life force</i>	etheric or extra dimensional?	strings/branes?
<i>Zero-point vibrations</i>	high energy and uncertainty	quantum
<i>Hydrogen bond dynamics</i>	unknown switching rules	atomic
<i>Connectivity and Order</i>	binary (or ternary?) coding	molecular
<i>Localized structure</i>	clusters versus bulk fraction	aggregate
<i>Network organization</i>	patterns and behaviors	system
<i>Physical</i>	dielectric and cohesion	substance
<i>Chemical</i>	solutes and reactions	mixture
<i>Biological</i>	all structures and functions	matrix

As an example, adding chlorine gas to water (as a disinfectant) changes its physical and chemical properties (as measured by conventional techniques), its network organization (via clustering), its localized structure and orientational order (via molecules rotating within the hydration envelopes), its hydrogen bond dynamics (via exchange rhythms), and perhaps its more subtle properties (if they were measurable). Conversely, changes initiated at the level of the life force or zero-point vibrations would certainly affect water within higher-level processes—although the magnitude of change would dictate whether this change could be measured using current technologies. In this manner, changes made within any of water’s hierarchical levels affect all others; however, the way in which they do so appears to be highly complex and nonlinear. Various methods of structuring water may simply address different hierarchical levels. The most subtle changes would be induced by or reflected in the life force as information is constantly exchanged between the seen (hydrogen bond dynamics) and unseen (string properties) realms through quantum-scale events (zero-point vibrations). While quantum mechanics accurately predicts the outcome of experiments performed on the subatomic level, there is still no accepted physical description for a quantum world. Actually, Nature’s continuous exchange of information results in a so-called *decoherence* that limits quantum phenomena to the subatomic level.⁷ Might quantum information be “translated” into the more familiar, or observable, world through vibrations that encode matter at the atomic or molecular level?

MORE THAN A SOLVENT

The role of water in biological structures and functions has consistently been underestimated by conventional science, primarily because of an understandable focus on larger, more complex, and seemingly more relevant molecules that are believed to set biological organisms apart from other aspects of the observable world. Biochemist and Nobel laureate Albert Szent-Györgyi believed the reason

that biologists have stumbled in their understanding of living systems is that they have tended to focus on particulate matter and to regularly exclude water.²¹ He maintained that all biological functions consist of the building and destruction of water structures, such that water is part and parcel of the living machinery (not merely its medium) and water is the very essence of the living state. Water's role in the assembly, activation, functioning, maintenance, and recycling of biological structures (e.g., proteins, DNA, membranes) is so profound that few biomolecules could exist in a recognizable or life-sustaining form without it.

Some scientists have suggested that water is not an optimal solvent for life's biochemistry and that all of water's unusual physical properties may not be required to sustain biological life.²² Whereas life elsewhere in the universe may utilize solvents such as ammonia (rather than water) as its matrix, the fact that water is an integral player in earthly life suggests that its roles are not limited to the physical and chemical processes currently identified by science. Does water have a more fundamental role than solvating biomolecules? Might water serve as the primary mediator of information in biological life forms? Water can certainly mediate the flow of information among biomolecules (e.g., DNA, proteins) and between forces (e.g., EM radiation) and biomolecules through conformational changes in hydration envelopes, integral (bound) water, and hydrogen bonds. Biological life has been characterized as a process of ever-repeating alternations between information and conformation, such that a change in one always reflects a change in the other.²³ It appears that water both structures and is structured by biological forms, perhaps occurring in an iterative manner or as a conformational "dialogue" between the two. Does water mediate the information-conformation link between biological forms and the life force?

While the answer to this question remains one of life's great mysteries, water's ability to transmit information among aspects of the biological world begs the question of whether it could transmit information between the biological and unobservable worlds. Does information pass from the unobservable (etheric) to the biological (material) world through quantum-scale events such as zero-point vibrations? And are those vibrations translated into binary (or ternary) codes via hydrogen bond rearrangements within water? If so, water's major role may be to convey information while serving as both an integral component of biological forms and a link to the life force. Are water's clusters repeatedly produced from its bulk fraction via the resonance between specific attractors and corresponding system behaviors? Could water be characterized as a self-organizing system that produces recognizable patterns (e.g., ordered or disordered) and behaviors (e.g., chaotic) as a result of individual water molecules interacting with only a few of their nearest neighbors? Systems theory suggests that water could.² Whether or not systems theory is able to definitively explain the uploading and downloading of information by water, it does represent another way to perceive the mysterious relationship between life force and water.

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APPENDIX

