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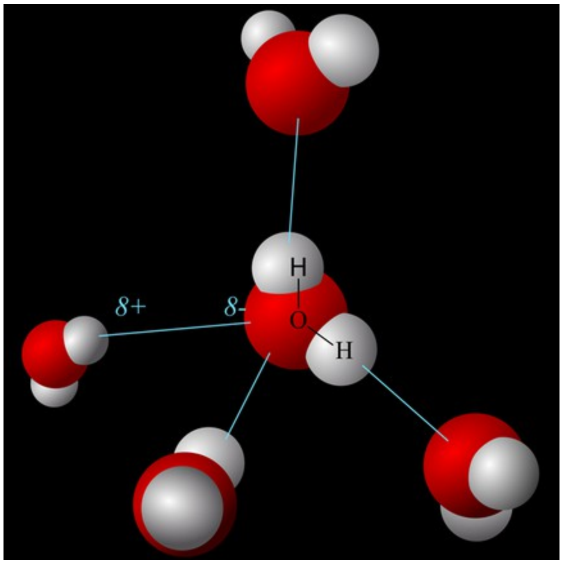
The HYDROGEN BOND



by Miles Mathis

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In a series of papers, I have diagrammed the nucleus, explained the foundation of the Periodic Table mechanically, and overturned electron bonding. Since the old explanations of covalent and ionic bonds are now gone, the explanation of the Hydrogen bond is also gone. It must be replaced. That is to say, the mainstream diagram above is wrong. In this paper I will diagram the water molecule and the Hydrogen bond, using my new nuclear diagrams. I will also diagram Carbon and Neon, showing why variant diagrams of these elements are disallowed. All this will further solidify my theory of nuclear structure.

In an upcoming series on plant physiology, I will explain how my charge field affects the mechanics of things like mass transport in the phloem and sap rising in the xylem. But since many of these questions will depend on the Hydrogen bond in water, it is best we take a look at that first.

The Hydrogen bond is currently explained in this way: in a molecule, Hydrogen is covalently bonded to an electronegative atom like Oxygen or Fluorine, which is called a bond donor.

> The electronegative atom attracts the electron cloud from around the hydrogen nucleus and, by decentralizing the cloud, leaves the atom with a positive partial charge. Because of the small size of hydrogen relative to other atoms and molecules, the resulting charge, though only partial, represents a large charge density. A hydrogen bond results when this strong positive charge density attracts a lone pair of electrons on another heteroatom, which becomes the hydrogen-bond a*cceptor*. [Wiki, Hydrogen bond]

That is pretty much the whole mechanics, such as it is. This description goes back to 1912, and it hasn't changed much since then, despite all the supposed advances in quantum mechanics. [Take note that Hydrogen bonding predates covalent bonding, which was proposed in 1916]. We now get the barebones of an "advanced theory," which adds this:

the hydrogen bond can be viewed as a metric-dependent electrostatic scalar field between two or more intermolecular bonds. This is slightly different from the intramolecular bound states of, for example, covalent or ionic bonds; however, hydrogen bonding is generally still a bound state phenomenon, since the interaction energy has a net negative sum.

I don't see anything advanced about that, except that it might be called a more advanced state of pseudo-scientific gibberish. But let us return to the first quote, which is at least analyzable. Notice that this theory calls *one* electron a cloud, and assigns it a field density. Let us pull that apart. What they must mean is that the orbit of the one electron is pulled a bit closer to the Oxygen atom. This would make the orbital radius greater on that side and less on the other side. I can see no other way to make sense of the "decentralizing." But this begs several *very* big questions. One, how can Oxygen pull on the electron? Calling Oxygen more electronegative doesn't explain anything, it just creates a name. The pluses and minuses we have on the electrons and protons don't explain it either, since the Oxygen atom is not an ion. The Oxygen atom, like all atoms, should have no charge, according to the current field definitions. The Oxygen atom already has an equal number of electrons and protons, so it cannot "want" another electron. In other words, it is not a cation, and should have no field affinity for electrons. Giving it such an affinity actually contradicts the field definitions.

I will be told that the covalent bond between H and O creates initial imbalances that lead to the Hydrogen bond, but we have no evidence of that beyond the bonds themselves. The entire mechanics is circular, and therefore non-existent. The covalent bond, like the Hydrogen bond, is not a mechanical theory. It is just a description of perceived imbalances, and an assignment of those imbalances to electron orbits. But the assignment to electrons actually contradicts the field mechanics of charge, as we have already seen. A negatively charged electron pulled by a positively charge proton simply should not act in this way. According to the split of charge, an electron should either fill an orbital or not. "Sharing" is a theory that makes no mechanical sense.

[It is also worth pointing out again that Hydrogen bonding predated covalent bonding, so any reliance on covalent bonding must have come after the fact. The theory of Hydrogen bonding was already set in its current stone before covalent bonding was "explained."]

We see this again when we look at more begged questions. Begged question 2: If the Hydrogen electron is decentralized by the nearby Oxygen nucleus, how is its orbit still stable? If you proposed such a thing in the macro-world, you would be booted from astronomy and celestial mechanics forever. An orbiter in a circular orbit, pulled on by an external source in the field, will not be thrown into a stable ellipse. According to the current and historical field equations, it doesn't work that way. Just look at the Moon and Sun. The Sun is a bigger external source, just as we are told Oxygen is in the water molecule. But the Moon is not thrown into a big ellipse, or "decentralized" like the Hydrogen electron is. The Moon is not much closer to the Earth at aphelion or closer to the Sun at perihelion. If the Sun pulled the Moon much closer at perihelion, the Moon should escape. Why does none of this apply to the electron?

I will be told it is because I am not allowed to make these field comparisons. The electron is not a discrete orbiter like the Moon, and the charge field is not like gravity. That is precisely why the mainstream explanation calls one electron a cloud. They want you to forget we are dealing with just one electron here, and they want to think of the orbit as a cloud. This prevents you from asking normal questions of them and their theories. They spend half of every day screaming that quantum mechanics doesn't make sense, that it is inherently mysterious, that it can't be visualized, and so on. Why? To make sure they don't have to answer any sensible questions. Their theories are insulated from the rules of logic and consistency, and you have to accept these theories just because people with awards tell you to.

But the truth is, neither the charge field nor the gravity field allows slop like this. You can't decentralize an orbit—even an orbital cloud—and expect the orbit to maintain stability. The orbit must be thrown out of balance by such a decentralization. An electron pulled out of its natural shell shouldn't be stable, according to the quantum field equations that now exist, and this proposal can stand only by further mathematical pushes and cheats in the field. Mainly it stands because no one questions it.

Furthermore, even if we accept the decentralization, it still wouldn't explain the charge lows and highs we are given. We are told that where the electron comes close to the Hydrogen nucleus, we have a field positive, as you see in the diagram under title. But the charge field doesn't normally work that way. If you bring opposite charges nearer, you tend to get a greater attraction. Think of a magnet, which is much stronger at small distances than large. I will be told that charge is not magnetism, but charge does underlie magnetism, and it doesn't work in the opposite way. According to the current field equations, moving the electron nearer should increase the field attraction between electron and proton, which should make the electron crash into the nucleus. If the electron was balanced at the original distance, it cannot also be balanced at the new distance.

A third question begged is how "the field" can be changed by this decentralization of the electron. This is the killer to the theory. Since E/M has no real field, it is not clear how this field can have greater or lesser density. Density of what? Charge is just a plus on the proton and a minus on the electron. That doesn't create a field or any density, does it? Remember, the current theory of charge doesn't have my charge photons to work with. The current field is empty, except perhaps for virtual "messenger" photons moving directly between protons and electrons. In the quote above, the word "density" is unassigned. What is charge density? At the macro-level, charge density has a meaning, since it means the number of electrons or protons present. At the quantum level, it means nothing. In this problem, we just have the one electron, which creates an electron density of 1 no matter where it is. If the electron is there, the density is 1. If the electron is not there, the electron density is 0. These people want you to believe that varying densities can be created with one particle in a "cloud," but they can't. Density requires a collection of particles, and so does a cloud.

To vary density in a charge field at the quantum level, you would have to have a way of splitting the fundamental charge. We would need lots of little subcharges (less than 1) flying around, and a greater density of these subcharges would explain a field variation. But with charge assigned to the electron, we have no way of splitting charge. Again, the charge is assigned to the electron and goes with it wherever it goes. There is no field charge, because there is no real field. There is no charge less than 1, and therefore no way of varying the charge density in this problem.

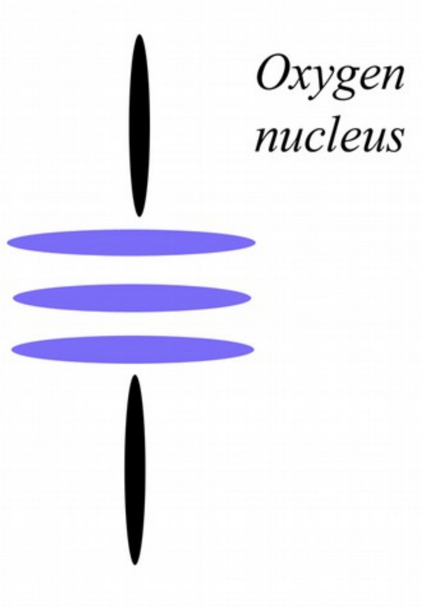
If you push on this, they show you a lot of math that basically creates densities from varying probabilities, but that is fudge of the brownest kind. The electron has a low probability of being in one position, they tell you, and a higher probability of being in another position, and then all those *positions* are treated as particles. We have a probability density of one particle. Fudge. A density can only apply to a field of particles, and we have no field of *particles* here. We have a pseudo-field of *particle*.

Both the theory and the math is pushed to match the bond we know exists, but both the theory and the math are contradictory. They don't even bother to follow their own field definitions. They just magically create whatever they need.

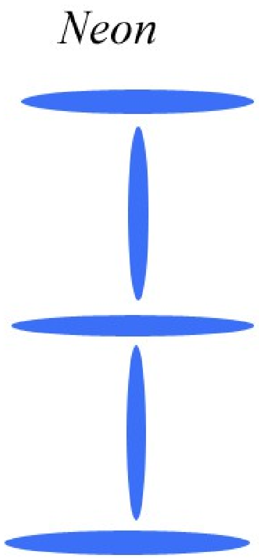
Currently, the Hydrogen bond is used as proof of the theory. Since we see Hydrogen bonding, the theory of Hydrogen bonding must be correct. If you don't see how ridiculous that argument is, you will in a moment, when I show you the real mechanics behind Hydrogen bonding. Perhaps it takes a side-by-side comparison to see how pathetic the current theory really is.

In previous papers I have shown that molecular and inter-molecular bonds aren't created by electron orbits, they are created by channeling the charge field through the nucleus. In my field, we have real photons as our field particle, creating real densities. These photons are recycled through charged particles, and the charge field is given a definite direction by this recycling. We can then study the diagrams of the nuclei involved, and the bonds will show us how the charge field densities are created.

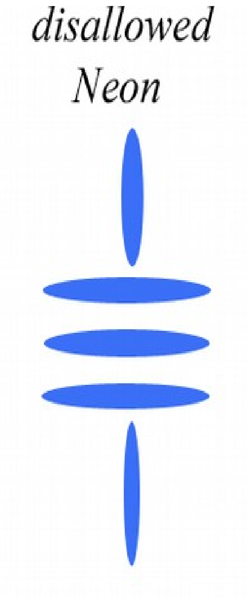
I already explained the molecular bond using these nuclear diagrams, and I did so without having to diagram a single electron or neutron. It is the protons that explain almost everything. Here is Oxygen, from my paper on that nucleus.



The black disks are protons, the blue disks are alphas (Helium). The blue disks can accept two protons in each hole, and as you see, we only have one proton in each hole. But if we put the new protons (Hydrogen) into the holes, wouldn't we just get Neon? No, because that isn't the diagram of Neon.

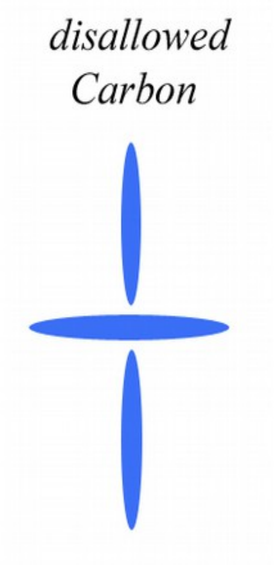


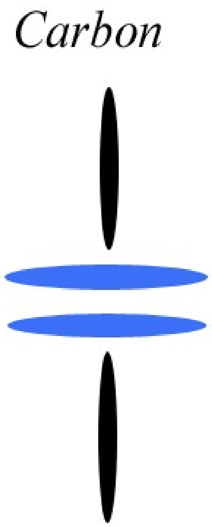
We can't put a second proton in the holes in the ends of Oxygen. Why? Because the double fans push too much charge through the nuclear axis. We may assume stars do try to build Neon that way, but the configuration isn't stable. The axial charge blows the stacked alphas apart.



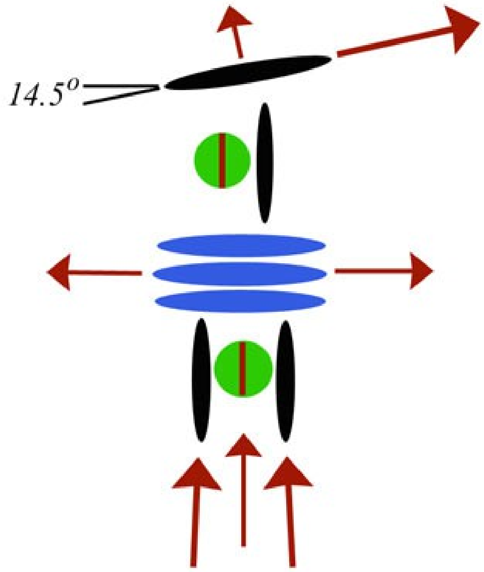
If we diagram a lot of nuclei, we find that blue alphas *can* go in the axial positions, but only in larger nuclei where there is more mass in the center.

You will say, “Then why don't the blue alphas blow apart the single alpha at the center of Neon?” Because the cap alphas top and bottom also dissipate charge to the sides, taking pressure off the central alpha. The configuration isn't stable without those cap alphas, since Carbon is not built that way.





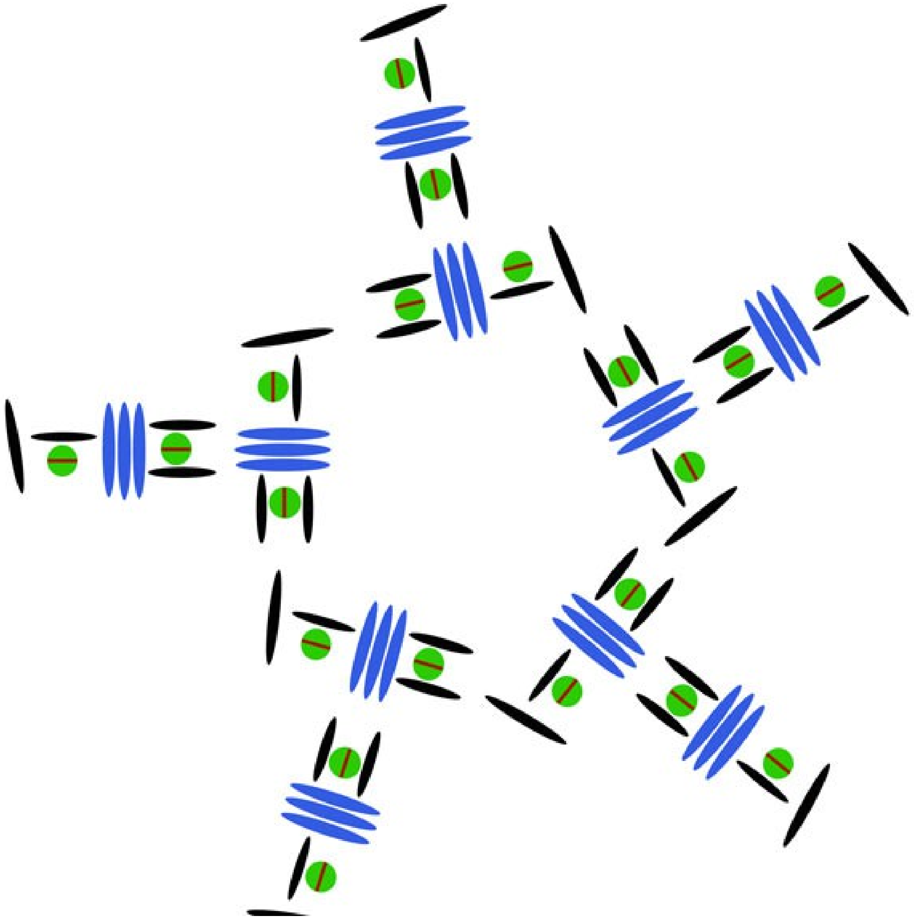
OK, so we know where we can't put the Hydrogen atoms in water. But where do they go? They go here:



To help you understand the angles, I have drawn the outer neutrons and the main charge channels. To see the full explanation of that diagram, including the angles, you may go to this more recent paper on structured water.

This also mechanically explains the unbalanced charge field of water. As you can see, we have several charge channels, including both negative and positive channels. I have drawn only the primary polar channel, but there will also be a secondary channel moving down through the molecular axis. This parallels the mainstream explanation in some ways, but here we have a mechanical diagram of it, one that has nothing to do with electrons.

It also gives us an easy way to explain Hydrogen bonding, since those field differences will line up edge to hole. Like this:

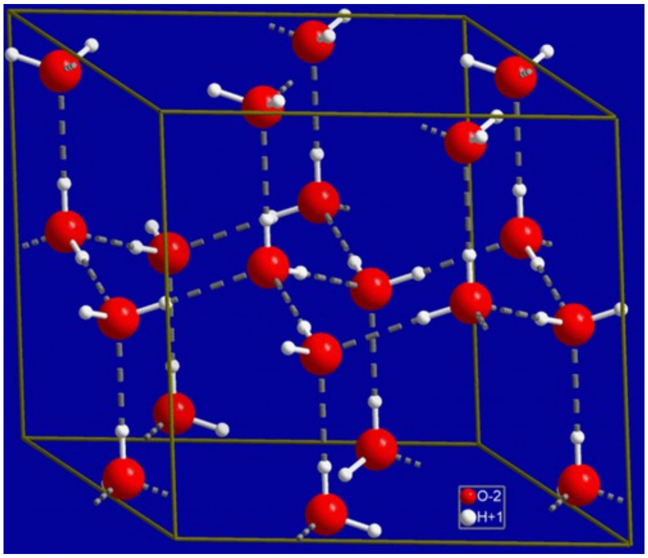


From that, we see the mechanical cause of the field potentials—plus and minus—are not caused by electron orbitals or by decentralized clouds. They are caused by the real charge channels through and beyond the nuclei and molecules.

This is the two-dimensional diagram of water, and it helps us understand capillary action. It shows that water can create films a single molecule wide, if it needs to. But in most cases, this two-dimensional diagram will become a three-dimensional diagram, which I cannot draw for obvious reasons. In the 3-D diagram, we turn the outer water molecules into the page. We can then plug five more molecules into those carousel level alphas (blue inner disks) coming *out* of the page. This allows us to create a solid structure. I also gives us four bonds with each molecule instead of three. It also immediately explains why ice is less dense than liquid water. Turning the molecules to create a 3-D structure creates larger free spaces between molecules than in this 2-D diagram, which causes both a loss in density and an expansion in freezing.

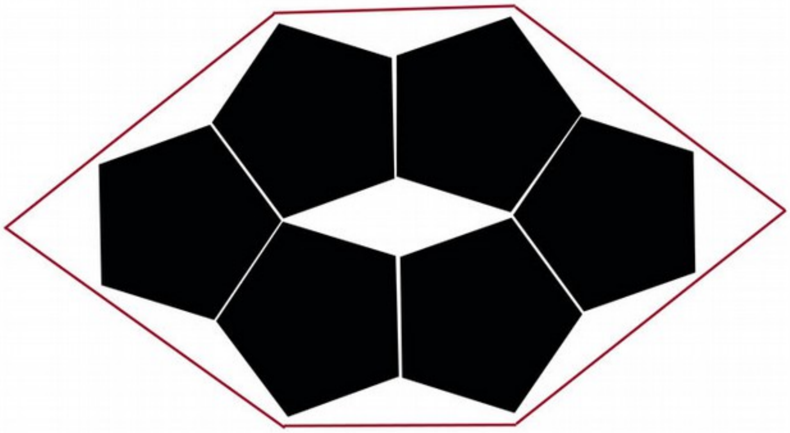
And yes, this means that liquid water is basically a compound of many of these 2-D diagrams. In the liquid state, these single films can move across one another with little resistance. You will say, "but this means water should have a lot more strength in one direction than another!" No, it has very little tensile strength in any direction, as we know. You can't make a rope out of water (in normal circumstances). None of these bonds is strong at all in the liquid state. We can see why just by studying the diagram more closely. All these bonds are weak because they aren't caused by true charge plugs. They are created by charge *alignments* only.

If we turn every other molecule a quarter turn, we can strengthen the larger structure a bit, giving ice a higher tensile strength. But ice can still be chipped pretty easily, and this is because we are focusing the external force on one plane of bonds.

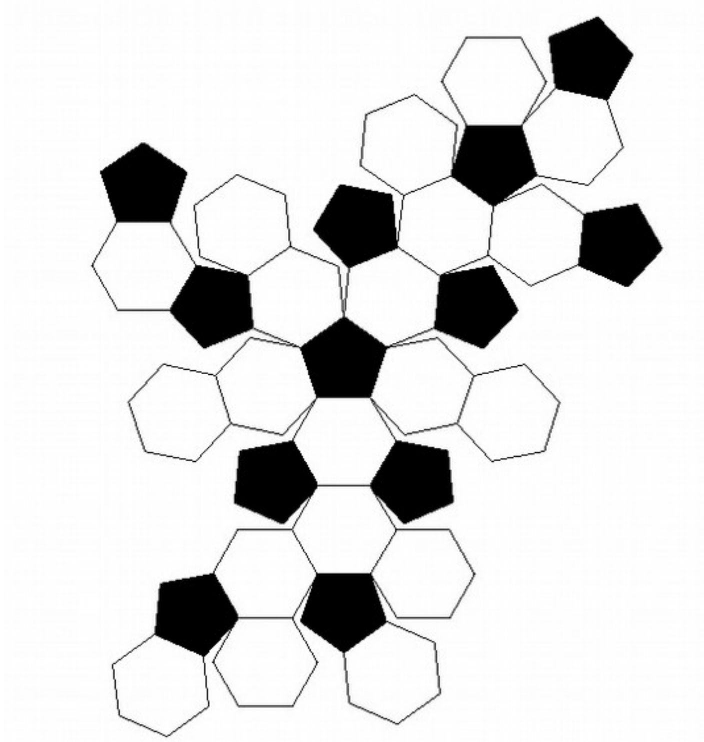


Now let us see what is wrong with the current model. That diagram is from Wiki, and it is supposed to be hexagonal ice. Although I would say it is a confusing model, it is actually fairly close to my model, since we do see the four bonds between each molecule. The biggest problem is that no bond is opposite another bond, and, as I have shown, that can't work. To channel charge through the nucleus, we must have my diagram, not this one. In other words, the central Oxygen nucleus must be channeling pole to pole in a line, as in my diagram.

My diagram is also pentagonal, not hexagonal, and I did that to match the angles. The internal angle of the pentagon is 108, which is closer to 104.5 than the internal angle of the hexagon, which is 120. From this, I think it is probable that the hexagonal structure of ice is not caused by this smallest scale bonding. It is probably caused by a hexagon created at a slightly larger scale. It may be this simplest possibility:



Or it may be this combination of pentagons and hexagons, as found in soccer ball construction:



Is that hexagonal or pentagonal? Depends on whether you are basing structure on the black molecules or the white spaces between them.

Or it may be some structure at a slightly higher level of scale.

Before I sum up, let us look quickly at the so-called covalent bond between Hydrogen and Oxygen. As you see, no electrons are being shared. The Hydrogen protons are simply aligning themselves to the charge field surrounding the Oxygen nucleus. It is the ambient and channeled charge field that defines and creates these structures, not electron configurations. Spinning protons maintain the channels, not the electrons. The electrons are mainly along for the ride.

To recap, I have shown you the mechanical reason for:

1) Why the Hydrogen bond is weaker than the ionic or covalent bond. Basically, the charge plug-in is weaker, because the charge is channeled with less focus through the molecule.
2) Why the covalent bond is weaker than the nuclear bond between protons and alphas. Here, the proton isn't plugging into an alpha, it is simply aligning itself to the charge field. Because it is a dissipated charge field (three stacked alphas emitting parallel), it doesn't require great pressure or temperature to create the bond.
3) Why ice is less dense than liquid water, and why it expands at freezing. The quarter turn explains it.
4) Why water creates a meniscus and capillarity. The Hydrogen bond can create a nearly 2-D structure in liquid water, so that water maintains its tensile strength even in the thinnest films.
5) Why the water molecule has charge maxima and minima, without using electrons to explain it. The outer levels of the nucleus explain it, not electron orbitals.

All this brings quantum mechanics in line with macro-mechanics. The rules are the same for both, and nothing at the quantum level is spooky, counter-intuitive, mysterious, or magical. The quantum level was never irrational, only the explanations were irrational.

Now that we can see these old explanations in the light of the correct explanation, we see what a sham of salesmanship and misdirection it all was. Basically, molecular bonding was assigned to electron orbitals on a hunch. The physicists at the time were very excited about the electron, and they wanted to give it an important job. So they pushed the models in some very strange ways, creating a terrible mash of contradictions. They didn't even bother to match their models to their own field definitions. They then sold these models with great fanfare and authority. When critics pointed out the glaring contradictions in the models, the theorists responded by assuring them that the theories were correct, but that physics at the quantum level no longer made sense. The problem was with the critics, who foolishly expected physical theories to make sense.

Then, rather than look for better models, these physicists spent the next century entrenching the first theory, building an astonishing array of walls around it, walls of math, walls of tortured logic, and walls of intimidation. And it wasn't just the original physicists who did this, of course, since they died long ago. No, it required several generations of extravagantly dishonest physicists to perpetuate this fraud. At first the students were protecting their masters, but then they found they were protecting themselves. To justify this, they told themselves they were protecting the sanctity of science, but we can now see they were only propping up threadbare dogma at any cost.

This has been the story of physics in the 20th century, in all subfields. In fact, it has *always* been the story of physics, and the story of human progress. This is the way it works, and this is why progress is so slow. The universities always have some quote over the door, like “seek the truth and the truth will set you free,” but a closer look at the universities shows that they have no interest in truth or freedom. They are nests of careerism, small-mindedness, and academic gatekeeping. They actually do everything they can to prevent any discovery of the truth or any outbreak of academic freedom. The university, like all other institutions, has as its primary function the suppression of progress. Why? Because progress implies an overcoming of the present state of things, and most people are very attached to the present state of things. In short, their careers depend on the present state of things. Progress might mean that they are replaced by the more competent, and they have no interest in that. For this reason, almost all the work done in any field is protective. That is to say, it is the suppression of the new.

To hide this fact—from outsiders as well as themselves—those in the field create a constant line of fake novelties. This misdirects everyone into thinking things are getting done, when nothing really is. We see this in both art and science, and it is very transparent, for those with their eyes open. In art, the fake novelties have replaced art completely, and most people are aware of that on some level. But science is no different. We see that here with the theory of molecular bonding, where no fundamental progress has been made in a century. The updates to the field are only new mathematical tricks which further insulate the theory from analysis.

Of course there is just so much you can do to divert attention in this subfield where physics meets chemistry, and most of the diversion in physics takes place via esoterica. Whether you are a physicist, a chemist, or a layman, your attention is diverted away from these basic theoretical questions by a constant barrage of “new” physics involving black holes, neutrinos, dark matter, string theory, inflation, or whatnot. That is to say, if you have any native interest in theory, your attention will be on these sideshows with flashing lights. Since *Scientific American* doesn't concentrate on fundamental problems in physics, it is likely that neither will you. Since the peer-reviewed journals don't address fundamental problems, it is likely that neither will you. Not only do the peer-reviewed journals and mainstream publications not address fundamental problems, they spend a great deal of time warning you off these problems. “Shut up and calculate!” “Only the naïve expect quantum physics to make sense!” And so on. And it isn't just mid-level physics police who warn you off in this way, it is the top physicists. If you read Feynman or Pauli or Hawking or Gell-Mann or Susskind or Weinberg or any of the rest, you will find they spend about 2/3 of their time diverting you into very dense math, and 1/3 of their time warning you off mechanical questions. You should long ago have found this behavior very strange, coming from physicists at any level.

As I said, my next series of papers will dive off into biology. I now have a professor emeritus of plant physiology in the family, and he has drawn my attention to the fundamental problems in that field. As usual, I will solve these problems with my charge field, the key to a thousand doors.

[You can now go to my newest paper on the Hydrogen molecule, to see how charge bonding replaces covalent bonding between atoms.]

[You can also visit my even newer paper on structure in water, where I analyze Gerald Pollack's book, *The Fourth Phase of Water*. That is where I developed the new diagram of water which includes the 104.5 degree angle, and where I show the equation for that angle.]

2011: You may now read my paper on transport in plants.