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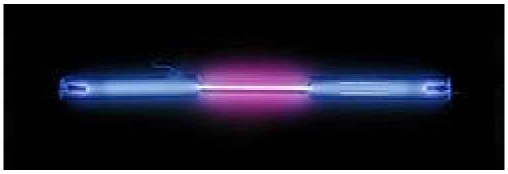
DIATOMIC HYDROGEN



by Miles Mathis

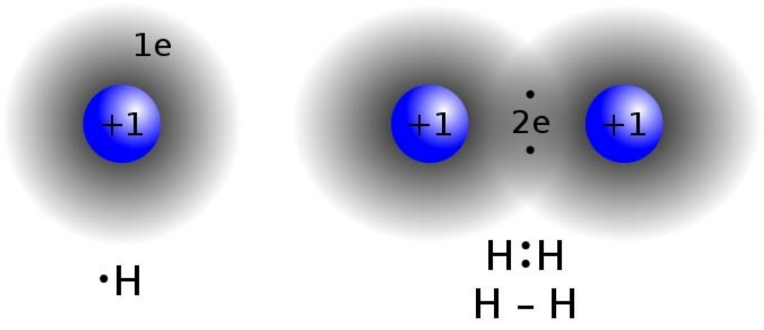
As further proof of my new theory of charge field bonding—replacing the absurd theory of covalent bonding—let us now look closely at hydrogen gas, which is diatomic. We have been told for many decades the bond with diatomic gases is covalent, or a sharing of electrons. But that theory has always been a non-starter. It is outrageously unmechanical, and physicists have not provided us with any sensible explanation to this day. With charge defined as it is as an attraction between electron and proton, sharing of electrons cannot explain the bond we see. The theory is just a thin wall of words with no foundation beneath it.

To start with, the hydrogen atom as it is currently modeled has no heterogeneity with which we can work. It is a single proton with a single electron. The atoms should have no attraction for one another, since the proton in one must repel the proton in the other. The electrons cannot help us, because even if we propose they block the proton repulsion somehow, they should also repel one another. And, if charge is balanced in each atom—meaning, the proton and electron in each atom offset—then, again, we have no source of attraction. The atoms should either be neutral regarding one another, or they should repel. Nothing in the definition of opposing charge indicates that they should attract.

To get past this, we are told that atoms have an electronegativity. But again, that is just empty words. It is true that atoms have what we call electronegativity, but it has never been shown *how* they create it or what it is. This is especially true with hydrogen, which, as I said, has no heterogeneity for theorists to point to. It is like being told that a perfect sphere has electronegativity. How and why? How can the orbit of a single electron create it? And the cloud makes it just that much harder to explain, since a cloud has even less heterogeneity than an orbit. If the electron stuck to a polar or equatorial orbit, this might give us something to work with, but current theory disallows that. According to current theory, the electron *isn't* in an orbit, it is in a statistical shell. A statistical shell doesn't create a shape that can begin to explain heterogeneity.

But even if we give the hydrogen atom some out-of-roundness or other shape, this still doesn't explain anything. Wobbles and spins by themselves don't create mechanical attractions, no matter what they are. What we need is the atom to have some sort of polarity, you see, so that one side is different than the other. We could then hook up a male side with a female side, like a socket, creating the diatomic molecule. But current theory doesn't build that polarity in any sensible way.

Current theory just manufactures the bond by fiat, telling us that because it must be there, it is there. It then gives it a name: covalent. It then draws a picture, something like this:



But since of course the electrons aren't over there, they can't be shared that way. What way are they really "shared"? No answer. And how would this sharing physically create a bond? No answer. It isn't a theory so much as it is a very weak and very bald proposition. It isn't even fleshed out as a theory, much less supported by any evidence or data. Neither atom has any reason to want the electron of the other atom, since it already has its own. If any sharing were really going on, that would throw off the whole definition of charge. For instance, if atom 2 shares any part of atom 1's electron, it would have more than 1 parcel of negative charge and still exactly 1 parcel of positive charge. It would be out of balance. Why would an atom have a propensity to go from balance to imbalance? That is what I mean by non-starter. The theory is bad from the first word.

Say we accept as a postulate that atoms do share electrons. Would there be any way to prove or disprove that? What I mean is, do the electron orbits or clouds or shells now encircle both protons, creating the bond that way? Can the electron of atom 1 ever be found on the far side of atom 2? How would we know? Say we probe the diatom and find an electron on the far side of atom 2. Is there any way we can know if it is the electron of atom 1 or 2? No. The electrons aren't tagged. The postulate cannot be proved or disproved by any observation of that sort.

The same goes for a crossing of paths, which is all that is diagrammed above. How does one electron crossing the path of another electron create a bond, or indicate sharing?

And even if the proposition were made that the bond was created by this encircling of both protons, a mechanism would have to be shown or at least proposed. How would an orbiting electron keep a proton corralled? There is no reason that an orbit should create a bond like that. Both electrons orbiting both protons does not create a bond. All it creates is a *configuration*. A configuration is not necessarily a bond.

The mainstream deals with all these questions by never asking them. It dodges all mechanics on purpose, in order to bury these questions. This is why quantum physics is all math and no physics. They have no physics, so the best thing to do is divert all theory into math and away from real explanations. They have been shouting for decades that math is more central to physics than physics is, but no sensible person should be convinced by that assertion. For instance, Feynman told us over and over that physics was matching math to data—that there is no physics beyond that at the quantum level, so stop expecting it. I have shown in many other instances that he was wrong. I have shown simple mechanical explanations for most of his mysteries. So the fact that he and his predecessors could not solve these problems was never an indication that they were insoluble. It was only an indication that they had given up too soon.

The same can be said for the spin isomers of hydrogen, called orthohydrogen and parahydrogen. In this theory, we at least get some heterogeneity, using spins. But it still creates no mechanics to explain the diatomic bond. In the first, the two protons are spinning parallel. In the second, they are anti-parallel. OK, we can accept that since it is a physical statement, but now tell us how this creates the bond. Current theory doesn't even *try* to create the bond using the isomers, because they know it can't be done with the theory they have. Although the isomers would seem at first glance to be a possible source for the mechanics—far more promising than any sharing of electrons—the theorists found decades ago they couldn't get anywhere with it, so they gave up. The isomers explain why some H2 is slightly different than other H2, but this difference isn't a cause or effect of the bond in current theory.

Now let me tell you how my theory solves this. It solves it by making charge a real field instead of an abstract field of pluses and minuses. I have shown that charge is not just mathematical potentials, it is a field of real photons. The protons and electrons recycle these charge photons, taking them in at their poles and emitting them (most heavily) at their equators. It is this recycling that creates the potentials in the field, by creating directions and variable densities. The analogy is wind, which creates field potentials in the same way. I have used this discovery to map and build the nucleus, showing how charge is channeled through the array. In the same way, this will allow me to create the diatomic bond in a natural and mechanical fashion.

I have shown in previous papers that the electron does not orbit the nucleus or proton, neither as orbital, cloud, nor statistic. It orbits only the pole of the proton. Since the electron is basically an overgrown and overspun photon, it is channeled in the charge field in the same way as the photons. The only difference is, it has too large a spin radius to be recycled through the proton. While the photons can go in the pole of the proton (much like photons go in the pole of the Earth, to create the E/M field of the planet), the electrons cannot. They are like a pingpong ball too big to go down the drain with the water. So, like the pingpong ball, they circle the drain or the pole. This is the way that electrons orbit.

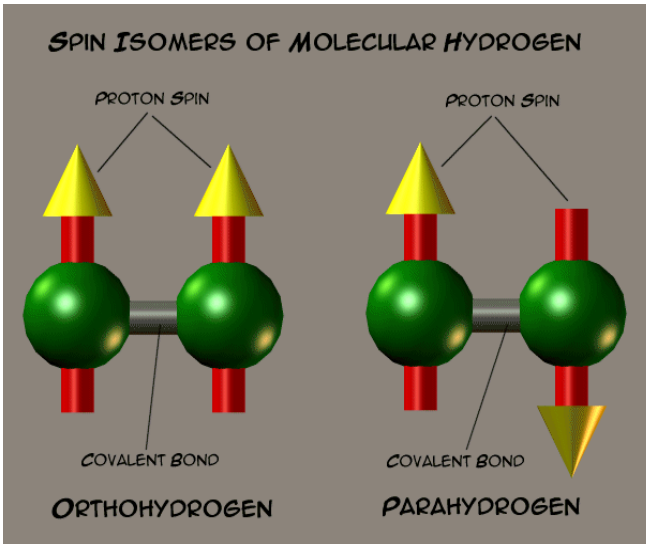
Electrons do not orbit the nucleus as a whole, they match up with a specific proton in the nucleus, and orbit the pole of that proton. Since the nucleus has several levels, the orbits of these electrons will also have several levels, matching current theory in many basic ways.

If this is so, I will be asked what the Bohr radius applies to, then. I have recalculated the Bohr radius, but I have not jettisoned it. If it isn't the average orbital radius of the first electron, what is it? It is the limit of effective capture for the hydrogen electron, not its orbit. I use the drain analogy again. The proton creates a charge vortex around its pole. Electrons passing near the equator of the proton will be driven off by emitted charge, but electrons passing near the pole will be attracted by incoming charge. But if they are too far away, the vortex won't have the power to capture them. The Bohr radius is a measure of this charge vortex, not of the orbit.

One mainstream physicist who skimmed my nuclear models sneered that my theory was just putting the orbitals inside the nucleus. What was the point of that? Well, the point of it is that it explains a lot of conspicuous data that the current external orbitals cannot. And it creates a mechanics where there was only bluster and fudge before. But it also explains the bond, as we will see now.

It explains the bond because it gives us a real mechanical heterogeneity that can act as polarity. You see, the electron orbits one pole and not the other. The electron is therefore on *one side* of the proton. This lopsides not only the atom, but more importantly the charge field around the atom. It *doesn't* tend to give the atom a spin wobble, since the electron is spinning in the vortex created by the spinning proton. This won't tend to give the atom much wobble (like a nutation) in its wavefunction, which is why we have missed it. What it *will* do is set up an imbalance in the charge field around the atom, with a lower charge density at the far pole. You see, unless we have a lot of anti-photons present as well, the south pole of the proton will be recycling very little charge. We will have a charge minimum near that pole.

As the current theory admits, the proton can be spinning either way. In other words, it can be upside-up or upside down. I would call the upside down one a species of anti-proton, but the current model does not. At any rate, they admit that it is simply a matter of statistics whether the proton is turned over or not, as you see from their own diagrams:



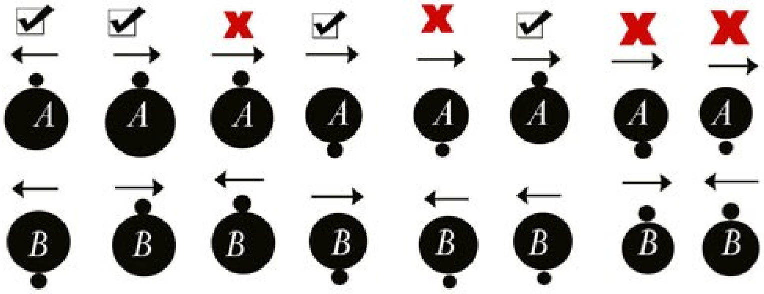
Well, if we reverse the spin, we reverse the vortex, and we thereby reverse the side that the electron is on. So we have now have two species of hydrogen atom, which I will call *e*-top and *e*-bottom.

As you see, the current model matches me here. But they can't *use* this heterogeneity to explain the bond because their charge field isn't real. It doesn't create real field potentials beyond the body of the protons. No channels are created, so the bond can't be a function of the charge channeling.

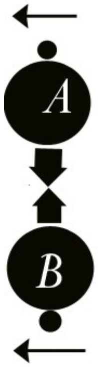
With my mechanical theory, though, it can. **In fact, it is the spin isomers that create the bonds.**

But the current model—despite its opacity and lack of mechanics—is actually oversimplified. The diagram above is missing a variation. There are not two possibilities, but four. We start with a spinning proton, which can be spinning left or right. The spinning proton will create charge vortices top and bottom. These vortices will attract electrons as well as photons. Once an electron is captured, the vortex is partially closed or stoppered by the electron there, and the pole at the other end of the proton mostly closes. In other words, if the electron is captured at the north pole, the south pole vortex mostly dries up, preventing the capture of electrons on both ends. Therefore, the right spinning proton can capture at either pole, and so can the left spinning proton. So instead of just *e*-top and *e*-bottom, we have *e*-top-left, *e*-top-right, *e*-bottom-left, and *e*-bottom-right. I will simplify this to TL, TR, BL, and BR. If we bring these atoms together, we now have 8 possible combinations. But only 4 of these combinations create an attraction and therefore a bond.

figure 1



Some might say we should have 24 or even 32 possible combinations here, but only eight are unique in this sort of field. Given top or bottom, the spins are either parallel or anti-parallel, as current spin isomer theory admits. However, as you see, current theory has its bond in the wrong place. According to what I can make of their diagrams, they have the atoms bonding along the equator. But for the reasons I have already given, the bonding must be along the poles. My arrows indicate the equatorial spin direction. So the bond is here:



The bond is created by the external charge field. Between the two atoms exists a charge minimum, which creates a low pressure. Since we have higher pressure above and below, the atoms are forced together. As usual, it is not a real attraction or a pull. It is mechanically a push from top and bottom, where the charge field is moving into the protons. This creates an apparent attraction and an apparent bond. We have a perfect signal that this is where the charge is moving in, since that is where the electron is. The electron is there *because* the charge field is entering there.

This is why both combinations of top-bottom create bonds and neither combination of bottom-top does. If we have the two electrons nearest eachother—between the protons—the competing vortices keep the atoms from bonding, no matter what way they are spinning [see combinations 7 and 8 in *figure 1*]. The vortices actually drive the atoms apart. But when we have the electrons opposite, outside the protons, as above, the bond is created no matter the spin directions. The charge field is moving them together regardless, as you see.

I think that is pretty easy to visualize, but what of the other combinations? What about when the electrons are both top or both bottom, as in the second combination in *figure 1*? Those create bonds only when the spin directions are the same. Why? Well, let us study combination 2 a bit more closely. Since the upper atom has a charge minimum at the south pole, the lower atom will be pushed into it. If both atoms are spinning the same way, then the lower atom will be able to fit right in there, like a threaded screw. But if the atoms are spinning opposite, it won't fit. It would be like trying to screw a left-threaded screw into a right threaded hole. Even with the proper pressure, the screw won't go. So the charge field does try to push them together, but the spins won't allow it.

For this reason, I would propose that we should see slightly different bond strengths among the four combinations that do bond. In *figure 1*, combinations 1 and 6 should be a bit stronger than 2 and 4. And there should even be a very slight difference between 1 and 6.

Notice that I have matched the known data for ortho- and para-hydrogen. We are told that equal spinning diatoms outnumber opposites by 3 to 1. Which is what I found in my mechanical combinations.

We are also told that at very low temperatures, the orthohydrogen begins to fail, and near absolute zero we find 99.8% parahydrogen. Do my new models explain that? Yes, very simply, as you see. I have just said that the top-top and bottom-bottom bonds should be weaker, and as we go to lower temperatures, these combinations dissolve first. Why? Because when we lower the temperature, we are lowering the overall density of charge photons present. That is what heat is, after all. Well, if the density drops, the charge minima and maxima also lose strength. That charge minimum at the opposite pole we have been looking at loses all its effect, and it can no longer act as a low pressure area. Since in combinations 2 and 4 we have a push from only one side, those combinations will dissolve first. That leaves us 1 and 6. But combination 6 must be stronger than combination 1, since it creates a lower low in the middle. The opposing spins act to drive out any remaining charge, keeping that area freer of external charge.

So we actually have proof from experiment of my previous proposition. I said that the bonds themselves should vary in strength, and that is what the low-temperature data is telling us. The para-bond of combination 6 is the last one standing a low temperature, and that must be because it was strongest to begin with. Current theory can't tie this data to the spin isomer data, but I can, you see.

An added benefit of my theory is that it allows us to throw out not only the ridiculous sharing of electrons, but also the equally ridiculous triplet-singlet quantum explanation of spin isomers. According to current theory, orthohydrogen has a spin degeneracy of three, corresponding to three states of the same energy. This theory uses the spin ½ of these fermions to create this triplet, but I have shown elsewhere that the whole idea of ½ spins is built on a logical fallacy, as well as on a misreading of the Stern-Gerlach experiment. This by itself destroys the theory of spin isomers. But even if it didn't, ask yourself how *two* spins can couple to form a *triplet* state. They list the three wavefunctions as $|\uparrow\uparrow|$, $1/\sqrt{2}(|\uparrow\downarrow|+|\uparrow\downarrow|)$, $|\downarrow\downarrow|$. This means they have just manufactured anti-parallel states from particles that are *known* to be parallel. Orthohydrogen is defined as parallel! But notice the middle wavefunction there, which is anti-parallel. Why would they do that?

They will say they are trying to cover all probabilities. Although we find the protons parallel after they have decohered*, they could have been anti-parallel. But what they are really doing with that middle wavefunction is trying to explain the M value of 0. They tell us the M value of orthohydrogen can be 1, 0, or -1. But as I showed in my Stern-Gerlach paper, there can be no value of 0 in a situation like this. The quantized expectations are 1 and -1, period. No expectation of zero. Because they don't understand that, they feel they have to manufacture a middle wavefunction here in this triplet, and the only way they can see to do that is by adding anti-parallels, as you see.

This is what I mean by ridiculous, because not only is it unnecessary, it is illogical and unprovable. The only data we have is the parallel protons, so how can they justify a triplet degeneracy? Why not an infinite degeneracy? Why not an infinite sum-over at this point, as with Feynman? Why not propose that the protons could have been anything before they decohered, including black holes, frisbees, or yellow dogs? As a matter of physics, all these proposals are just as valid as the triplet proposal. According to the rules of quantum mechanics, the probability that one of our protons was a yellow dog before decoherence is small, *but not zero*.

We can see the illogic when we look at the wavefunction for parahydrogen: $1/\sqrt{2}(|\uparrow\downarrow| - |\uparrow\downarrow|)$. We are told that because the total spin here is zero, we don't need to back-expand our observed data into a set of possibilities. But if parallel spins could have been anti-parallel before decoherence, why could anti-parallel spins not have been parallel? I will be told it is because parallel spins can't sum to 0. Well, if they can't sum to 0, then why did we have to cover an expectation of 0 with orthohydrogen?

The fact is, there is no triplet or singlet here. As we can see from the diagram, there is a couplet in both instances. It is the bonding of this couplet that requires explaining, not any back-engineering of degenerate or non-degenerate states. As I have said many times, the creation of this pseudo-math is simply to keep your mind off the fact that they aren't answering the primary questions they should be answering. If they can divert you off into these manufactured wavefunctions, they can make you forget that they have no sensible mechanics for this hydrogen bond. They have “sharing of electrons” as the main solution, and because that solution is so transparently pathetic, they then have to rush to cover it over with as much fake math as possible. They have been busy with this fake math for almost a century, and it now sits in huge stinking piles everywhere you go. Wikipedia is loaded down with so much fake math it is a miracle the entire internet doesn't collapse under its weight. I don't think I have ever gone to any physics website and gotten a straight answer to anything. It is all bluster and fudge and hiding behind fancy math. If you aren't sick to death of it, I know I am.

*For those not familiar with quantum mechanics, “decohered” means that a probability became a reality, or that a set of possibilities became one actuality, in the form of a measurable datum. The noun is decoherence, and it comes from cohere, meaning to stick together. A variant of adhere.